

# *UTAH NONPOINT SOURCE POLLUTION MANAGEMENT PROGRAM FISCAL YEAR 2018 ANNUAL REPORT*



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Prepared by:  
the Utah Department of Environmental Quality, Division of Water Quality  
in cooperation with the Water Quality Task Force

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Cover Photo: Fremont River Restoration Project. Implemented with Section 319 and State NPS funds

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## Introduction and Program Overview

This report fulfills the requirements of Section 319(m)(1) of the federal Clean Water Act of 1987. The Utah Department of Environmental Quality's (DEQ), Division of Water Quality (DWQ) annually prepares this report to inform the public, the U.S. Congress and the U.S. Environmental Protection Agency (EPA) on the state's progress in the area of nonpoint source water pollution abatement. Although this report should not be considered a complete account of all nonpoint source activities, it describes the most important features of Utah's program.

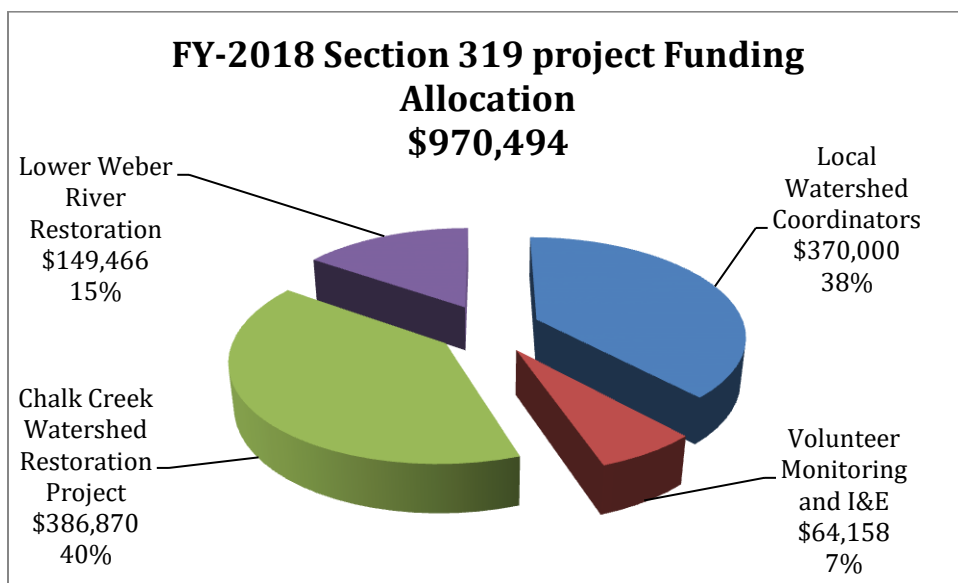
The mission of the Utah Nonpoint Source Pollution Management Program (NPSPP) is to support the environmental protection goals of the state as described in Utah Administrative Code (UAC) R317-2, in part to: 1) eliminate pollution which creates hazards to the public health; 2) to protect, maintain, and improve the quality of the waters of the state for public water supplies, species protection and propagation and for other designated uses; and 3) to provide for the prevention, abatement and control of new or existing sources of polluted runoff. The NPSPP works to achieve these goals by working in concert with numerous local, state and federal agencies and private parties pursuant to the NPSPP Plan.

Nonpoint source pollution refers to diffuse pollutants that when added together from an entire watershed can significantly impact water quality in streams, lakes and reservoirs. Nonpoint source pollution is diffuse, coming from land runoff, percolation, precipitation or atmospheric deposition. Precipitation washes pollutants from the air and land and into our streams, lakes, reservoirs and groundwater. Such pollutants can include sediment, nutrients, pathogens (bacteria and viruses), toxic chemicals, pesticides, oil, grease, salts and heavy metals. In Utah, our most common problems are nutrients, pathogens, metals, sediment, and salts. These pollutants alter the chemical, physical and biological integrity of the water and can impair their designated beneficial uses. Most waterbodies are listed on the State's 303(d) List of Impaired Waters because of nonpoint source pollution. Some of the common sources of nonpoint source pollution include agricultural activities, runoff from paved surfaces, mining and timber operations, recreational activities, onsite septic systems, construction, stream/riparian habitat degradation and natural sources.

## Grant Management and Program Administration

In Fiscal Year 2018 (FY-18) the NPSPP received \$1,459,000 in Federal Section 319(h) funds. Of these funds, \$488,506 was used for program related staffing and support, while the remaining \$970,494 was dedicated to 4 project grants. This was a 1% overall decrease in funding from the previous year (FY-17).

Section 319(h) funds are distributed to project sponsors at the local and state level to help address water quality issues contributing to nonpoint source pollution. Recipients of these funds can include local governments, watershed groups and individual cooperators. The projects selected for funding in FY-18 include the statewide volunteer monitoring program, support of local watershed coordinators, and on-the-ground implementation projects in the Chalk Creek and Lower Weber River Watersheds (See figure 1).



**Figure 1. FY 2018 Section 319 Project Funding**

In addition to the FY-18 Section 319 funds, DWQ continues to manage five other federal 319 grant awards which have been partially or completely expended. Table 1 summarizes grant awards by year and the approximate percentage that has been expended in each grant. The FY-2013 grant was spent out in FY-2017, and was officially closed out in FY-2018.

**Table 1. Section 319(h) Nonpoint Source Funding Project Allocations FY13 to FY18**

Federal Fiscal Year	Grant Award	Expenditures in FY-2017	Total Expenditures	Percent Expended
FY-13	\$861,621	\$0	\$861,621	100%
FY-14	\$893,621	\$131,173	\$846,610	95%
FY-15	\$879,521	\$142,532	\$736,659	84%
FY-16	\$987,458	\$123,668	\$549,672	56%
FY-17	\$1,004,260	\$313,766	\$313,766	31%
FY-18	\$970,494	\$0	\$0	0%
Total	\$5,596,975	\$711,139	\$3,308,328	59%



## Staffing and Support

In FY-18, DWQ devoted 5.15 Full Time Employee (FTE) to the NPSP that were funded 60% with 319 funds and 40% state revenue. Table 2 shows the positions and FTEs funded by the DWQ using Section 319 funds.

**Table 2. FTEs funded by 319 funds and state revenue**

PERSONNEL (# FTE's)	SALARY	Benefits	FTE	TOTAL EXPENSES	STATE (40%)	EPA 319 (60%)
Program Coordinator	\$65,793	\$43,219	1	\$109,012	\$43,605	\$65,407
Environmental Scientist	\$70,407	\$44,945	0.85	\$98,050	\$39,220	\$58,830
Environmental Scientist	\$72,642	\$45,820	1.00	\$118,461	\$47,385	\$71,077
Environmental Scientist	\$58,556	\$40,470	0.20	\$19,805	\$7,922	\$11,883
Environmental Scientist	\$72,370	\$45,403	0.25	\$29,443	\$11,777	\$17,666
Environmental Scientist	\$64,436	\$29,121	0.40	\$37,423	\$14,969	\$22,454
Environmental Scientist	\$68,298	\$44,170	0.40	\$44,988	\$17,995	\$26,993
Watershed Section Manager	\$80,680	\$48,559	0.50	\$64,620	\$25,848	\$38,772
Administrative Services Manager	\$57,900	\$39,545	0.20	\$19,489	\$7,796	\$11,693
Assistant Division Director	\$85,608	\$50,680	0.25	\$34,072	\$13,629	\$20,443
Division Director	\$117,137	\$58,122	0.10	\$17,526	\$7,010	\$10,516
<b>TOTAL 5.15 FTEs</b>	<b>\$813,827</b>	<b>\$490,054</b>	<b>5.15</b>	<b>\$592,888</b>	<b>\$237,155</b>	<b>\$355,733</b>
<b>SUPPORT</b>						
Travel				\$17,000	\$6,800	\$10,200
Current Expenses				\$130,000	\$52,000	\$78,000
Indirect Costs				\$74,289	\$52,000	\$78,000
<b>Total Support</b>				<b>\$221,289</b>	<b>\$88,516</b>	<b>\$132,773</b>
<b>Total Staffing and Support</b>				<b>\$814,177</b>	<b>\$325,671</b>	<b>\$488,506</b>

## ***FY-18 Accomplishments and Milestones***

### **FY-18 Accomplishments**

- Utah closed out the FY-13 Section 319 Grant, and all information has been entered into the Grants Reporting and Tracking System (GRTS)
- Water Quality Task Force meetings were held on October 5, 2017, January 9, 2018, and June 14, 2018.
- The annual agency coordination meeting was held on March 8, 2018. This meeting allowed partner agencies the opportunity to give a 15 minute presentation highlighting the nonpoint source pollution issues their agencies are currently addressing.
- The Utah Watershed Coordinating Council (UWCC) met 3 times during FY-18.
- A success story was submitted to EPA for the North Fork Virgin River. This was accepted and approved by EPA.
- DWQ and the EPA participated in a project evaluation tour of the Jordan River, Bear River, Chalk Creek, Provo River, Strawberry, and Pelican Lake Watersheds on September 18 - 20 2018.
- DWQ and the Natural Resource Conservation Service (NRCS) continued work in three 12 Digit HUCs in the Upper Sevier and Chalk Creek Watersheds using National Water Quality Initiative funding.
- DWQ began the process of updating the Utah Nonpoint Source Plan. This plan will be completed and submitted to EPA for approval in the summer of 2018.
- The Nonpoint Source Program Coordinator, DWQ's Assessment and Monitoring Sections, worked together to update the statewide nonpoint source monitoring plan that identifies the monitoring that will take place to document project effectiveness and facilitate the collection of data required for delisting waterbodies and generating success stories.

### **Annual Milestones**

To help the State of Utah gauge the success of the NPSPP, the State has developed annual milestones based on the five objectives of the NPSPP identified in the Management Plan. These objectives and milestones are as follows:

#### ***Objective 1: Environmental Protection***

##### **Annual Milestones**

- Number of TMDLs completed.
- Number of TMDLs initiated during the state fiscal year.
- Number of nine element watershed based plans developed.
- Number of nine element watershed based plans initiated during the state fiscal year.
- Number of projects dedicated to the protection of threatened waterbodies identified in Utah's 303(d) list.
- Number of projects focused on groundwater protection throughout the state.

#### ***Objective 2: Improve Program Efficiency and Effectiveness through Reporting and Evaluation.***

##### **Annual Milestones**

- Total number of stream miles restored (since 2013)
- Total estimated load reductions (TP, TN, TSS) in project areas (since 2013)
- Number of final project reports submitted (since 2013)



- Number of 319 grants currently open during the fiscal year
- Amount of unexpended funds in each open 319 grant
- Number of success stories submitted to EPA for approval showing the environmental benefits of completed NPS projects

***Objective 3: Improve Public Participation and Understanding of NPS Issues.***

**Annual Milestones**

- Number of participants involved in the Statewide Volunteer Monitoring Program
- Number of Information and Education projects implemented with Section 319 and State Nonpoint source Funding
- Updates made to the NPSPP Website

***Objective 4: Improve Data Collection and Management***

**Annual Milestones**

- Track updates made to enhance nonpoint source monitoring in the DWQ's annual monitoring strategy
- Number of Sampling Analysis Plans developed
- Track status and updates of Utah's AWQMS database
- Report on water quality data uploaded to the EPA WQX database

***Objective 5: Improve Coordination of Governmental and Private Sectors***

**Annual Milestones**

- Hold annual NPSPP coordination meetings
- Conduct annual consistency reviews with state and federal agencies
- Number of Water Quality Task Force meetings held during the fiscal year
- Amount of funding used to leverage 319 funding throughout the state. This funding can include program funding from Utah Department of Agriculture and Food (UDAF), DWQ, Utah Division of Wildlife Resources (DWR), United States Department of Agriculture (USDA), and other state, federal, and local agencies

For a complete report of how these annual milestones were met in FY-17, refer to Table 13 in the Appendix.

***Summary of Active Utah 319(h) Grants During FY-18***

For an entire summary of active Utah 319(h) projects see Tables 6, 7, and 8 in the Appendix.

***Watershed Based Plans/ TMDLs***

Section 303(d) of the federal Clean Water Act requires states to develop and submit for approval a list of impaired waters (referred to as the 303(d) list) every two years. The most recent version of the 303(d) list approved by EPA for the State of Utah was issued in 2016. Waterbodies listed as impaired require additional study to determine the sources of impairment, and if appropriate, have a Total

Maximum Daily Load (TMDL) determination made for the pollutant of concern. Currently the State of Utah is implementing 64 TMDLs. In addition, a comprehensive tracking tool for TMDLs and waterbody assessments has been provided by EPA that will assist in accurately reporting the status of completed TMDLs. DWQ has also prioritized the waterbodies listed on the 303(d) list of impaired waterbodies to determine where efforts should be focused to develop TMDLs and implement watershed plans. For a list of all TMDLs and watershed plans the State of Utah is currently implementing see Tables 9 and 10 in the Appendix.

### ***Project Proposals Approved for Funding During FY- 18 Solicitation Process***

Due to the high demand for 319(h) funds, the State of Utah has required that entities applying for funding submit pre-proposals to the State for review. Fifty four pre-proposals totaling over \$4.2 million were accepted from the first of April to the middle of June for the 2018 fiscal year. These pre-proposals were reviewed by DWQ using a project selection ranking criterion developed by the Water Quality Task Force. Once the proposals were ranked, they were reviewed by a subcommittee of the Water Quality Task Force, and the final grant awards were determined. Of the proposals received, 4 projects were selected for funding with Section 319 funds. The Weber River Watershed received the majority of project funds since the Weber River Watershed was the targeted basin in FY-18. The local watershed coordinators and an information and education (I&E) grant to Utah State University Extension, which includes the volunteer monitoring program, were also funded (Table 3). The projects that were not selected for funding with Section 319 funds were then considered for funding with State nonpoint source funding.

**Table 3. 2018 Project Implementation Plans (PIPs) for CWA Section 319 Funding**

<b>Title</b>	<b>Allocation</b>
USU Volunteer Monitoring and I&E	\$ 370,000
Local Watershed Coordinators	\$ 64,158
Lower Weber River Restoration Project	\$ 149,466
Chalk Creek Watershed Project	\$386,870
<b>Total</b>	<b>\$ 970,049</b>

## **NPS Program Strategic Approach**

To be eligible for funding, nonpoint source projects must be located on a waterbody, a tributary to a waterbody identified on the 303(d) list of impaired waterbodies, or in a waterbody that is at risk of becoming impaired. A current watershed plan should also be in place which covers all nine elements required in an EPA approved watershed based plan. Using a targeted basin approach allows watershed planners time to develop watershed plans between funding cycles. To help facilitate the development of watershed plans and identify sources of pollutant loading, DWQ conducts annual intensive monitoring runs two years before funding is scheduled to be received by the targeted basin.

### ***Targeted Basin Approach***

The State of Utah uses a targeted basin approach to reduce nonpoint source pollution. FY-18 represents the 9th year of implementing the targeted basin approach (see Table 4). This approach allows the state to focus implementation efforts on a specific watershed and will promote effective implementation of TMDLs and watershed plans.

The Weber River Basin obtained the majority of the 319 funds allocated for Best Management Practice (BMP) implementation in FY-2018. Projects located in the targeted basin also receive additional points in the ranking process, increasing their likelihood of being funded.

**Table 4. Basin Priority Funding Schedule**

Basin Priority Funding Schedule											
Watershed	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
(1) Jordan/ Utah lake											
(2) Colorado River											
(3) Sevier, Cedar-Beaver											
(4) Bear River											
(5) Weber River											
(6) Uinta Basin											

### ***Utah Nonpoint Source Funding***

DWQ uses funds generated from interest earnings on State Revolving Fund (SRF) loans awarded by the Utah Water Quality Board to address nonpoint source issues. Individuals, businesses, private entities, associations, and government agencies are eligible to receive these grants. Much like Section 319(h) funds, all project proposals received are ranked and prioritized. The highest priority projects are those that address a critical water quality need, human health concerns, and would not be economically feasible without the grant. In FY-18, 43 projects were funded using State nonpoint Source grants, totaling \$984,561. In addition to these projects an additional \$15,439 was reserved for on-site septic system projects that may arise during the year. For a complete summary of FY-18 funded projects see Table 11 in the Appendix.

#### **Program Match Status**

Federal 319(h) funds received by the State require a 40% non-federal match for staffing and support and project funding. Most of the match for projects is provided at the local level by project sponsors and cooperating landowners. DWQ provides State nonpoint source funds as match to selected 319 projects to provide an additional incentive to implement BMPs.

There are several state and local programs which have been very helpful in generating match for the 319 projects. DWR manages several grant programs, which include Habitat Council funds, Blue Ribbon Fishery program, and Watershed Restoration Initiative funding. These funds are dedicated to the improvement of wildlife habitat on public and private lands, while improving water quality. Table 5 shows the match associated with the projects where FY-2018 State Nonpoint source and Section 319 grants were used. Of the nonpoint source grants funded, \$7,977,399 in match is generated from other programs, or landowner match. This equates to a 4:1 ratio of nonpoint source grant to partner funding.

The Utah Conservation Commission manages the Agriculture Resource Development Loan Program (ARDL), which in recent years has been expanded to include water quality improvement projects on farms and ranches. The Grazing Improvement Program (GIP) at the UDAF also provides state revenue to improve management of upland and riparian areas throughout the state. All of the programs mentioned above have provided match for 319 funds in jointly funded projects. These state programs are tremendous assets to the improvement of water quality in this state.

DEQ provides state revenue to match the staffing and support 319(h) funds that are part of the Performance Partnership Grant (PPG). The Utah Association of Conservation Districts also tracks match accruals through projects managed by the local Conservation Districts, where applicable, via an annual contract.

**Table 5. Match for federal 319(h) funds**

<b>Funding Source</b>	<b>Match Amount</b>
NRCS	\$1,975,354
Cooperator Match	\$333,001
Utah Watershed Restoration Initiative	\$1,264,473
U.S. Forest Service	\$456,179
Universities	\$331,109
UDAF	\$486,667
Local Government	\$1,040,000
USGS	\$141,566
U.S. Fish And Wildlife Service	\$450,000
Utah Division of Wildlife Resources	\$66,000
Other	\$1,433,050
<b>Total</b>	<b>\$7,977,399</b>

#### **Integrating Watersheds and NPS Funding (Basin wide summary)**

Watershed coordinators have proven to be very effective at helping implement water quality projects on the ground. Local watershed coordinators develop relationships with landowners and educate them on the benefits of installing BMPs. They also oversee all project planning, design, project implementation, and reporting. They help organize and facilitate meetings for local watershed groups involved in watershed planning and in the project solicitation and selection process. They are also responsible for much of the project effectiveness monitoring of projects implemented in their watersheds.

#### ***Southeastern Colorado River Watershed- Arne Hultquist***

In FY-2018 the Local Watershed Coordinator for the South East Colorado Watershed completed seven projects. These projects included large amounts of riparian improvement work, removal of invasive species from the riparian corridor, and the revegetation of those areas. In total, 11,616 feet of riparian corridor were treated.

In addition, assistance was provided to two animal feeding operations to help the operations adhere to water quality regulations and given to the Southeastern Utah Health Department to develop a storm water retention basin using green infrastructure to protect springs in the La Sal Mountains.

The local watershed coordinator also completed a watershed plan for the Montezuma Creek Watershed, and began to revisit the Spanish Valley watershed plan to see if any additional revisions are needed prior to the targeted basin in 2021.

#### ***Bear River Watershed- Gabe Murray***

The Bear River Watershed Coordinator was able to complete six projects in the Bear River Watershed in FY-2018. Two projects were focused on improving hydrologic function and water quality on the main stem of the Logan River; 5040 linear feet of riparian area was treated and cracked willows were thinned and removed from the project area thus reducing the amount of erosion taking place within the restored areas.

Additional projects included one animal feeding operation and three riparian improvement projects. The riparian improvement projects consisted of over 7,000 feet of riparian fencing and the installation of five beaver dam analogue structures.

The local watershed coordinator continues to work with local landowners on eight other projects around the watershed. These projects are located in various locations within the watershed, and largely consist of projects that will improve riparian areas in waterbodies that are in need of restoration.

#### *Provo River/ Utah Lake- Dax Reid*

The Provo River Watershed Coordinator position has been in place for a year and a half, and the coordinator has done a good job finding projects and assisting with the improvement of water quality through the facilitation of various watershed groups, the development of watershed plans and TMDLs, and monitoring water quality within the watershed.

The Coordinator is currently working with landowners on the Spanish Fork River, and the Wallsburg watershed to implement projects focused on improving water quality. It is anticipated that several of these projects will be completed in FY-2019.

#### *Weber River Watershed-Andy Pappas*

The Weber River Watershed was the targeted basin in FY-2018. In preparation for this funding, the local watershed coordinator was able to assist with the updating of the watershed plan for the South Fork of Chalk Creek, as well as the completion of a watershed plan for Huff Creek.

In addition to watershed planning efforts, the local watershed coordinator was able to complete a demonstration project in the South Fork of Chalk Creek that consisted of 250 feet of stream bank improvement and 700 feet of riparian fencing.

FY-2019 will be a very busy time for the coordinator, with 9 large projects under contract. The Weber Watershed Coordinator has focused efforts in the uplands. Traditionally, landowners would fence cattle off of the rivers to reduce the amount of cattle present in the riparian area. Currently, the coordinator is working with landowners to develop water sources higher in the watershed. This helps better distribute cattle throughout the property allowing the landowner to utilize all of the feed present in the pasture, and encourages the cattle to spend more time on the ridgelines where the new watering troughs have been installed.

#### *San Pitch Watershed- John Saunders*

The San Pitch Watershed Coordinator has been very productive implementing project work on the San Pitch River near the town of Mount Pleasant, Utah. In FY-2018, ten projects were completed in the San Pitch watershed, restoring 13,792 linear feet of stream channel, installing 11,520 linear feet of riparian fencing and transitioning 76 acres of farmland from flood irrigation to sprinkler irrigation. As a result of the hard work of the local watershed coordinator, the Local Conservation District, and the Local Watershed Group, they reached an incredible milestone in 2018 by completing over 10 miles of riparian restoration work on the San Pitch River!

In addition to the great projects that were implemented in FY-2018, the local watershed coordinator continues to work with nine other landowners within the watershed. These projects consist of additional riparian restoration work, animal feeding operations, pasture management, and irrigation water management projects.

Beavers have become quite an area of discussion within the watershed. Beavers have begun to inhabit many of the treated riparian areas, and while landowners were initially not happy about this, they have begun to warm up to the notion of beavers present in their riparian areas. To help people understand the importance of beavers, and to better manage them, the local watershed coordinator is doing flow monitoring in reaches where beavers are prevalent. The coordinator is also drafting a beaver management plan that will identify where beavers should be, and what to do when they move into areas where they are not welcome, such as irrigation diversions and canals.

#### *Upper Sevier Watershed- Wally Dodds*

The Upper Sevier Watershed Coordinator was one of the first watershed coordinators hired to assist with the implementation projects in the State of Utah. The coordinator's project area expanded into Otter Creek, Fremont River, North Fork of the Virgin River, and Pinto Creek. The coordinator also does much of the planning for NRCS as part of projects selected for the National Water Quality Initiative (NWQI) program.

In FY-2015, six water quality projects were completed in the Upper Sevier Watershed. These projects consisted of 1,400 acres of upland treatments, and 9,932 linear feet of stream bank restoration throughout the watershed using State Nonpoint Source Grants and NWQI funding.

The local watershed coordinator is also working with four other landowners to implement project work in the Upper Sevier River Basin. It is anticipated that these projects will be completed in FY-19. In addition, the Upper Sevier River Basin has been selected as an NWQI watershed again in FY 2019. Planning and monitoring NWQI projects will continue to take up a large amount of the watershed coordinators' time.

### ***Nonpoint Source Water Quality Task Force***

The mission of the Utah Water Quality Task Force is to facilitate coordinated and holistic management of Utah's watersheds for the protection and restoration of Utah's surface and ground waters. The NPSPP is administered by DWQ through the coordination and assistance of the Utah Water Quality Task Force, and its established ad hoc committees. The responsibility of the Utah Water Quality Task Force is to advise the DWQ in the holistic management of Utah's watersheds, with a focus on reduction of nonpoint source pollution. DWQ is responsible for the chairmanship of the Water Quality Task Force.

#### *Functions of the Utah Water Quality Task Force*

- Serve as a coordinating body for the review and direction of federal, state and local nonpoint source management programs to assure that these programs are implemented consistent with the NPSPP Plan (approved by EPA in 2013 and as amended or revised)
- Promote and foster better alignment of relevant programs to assure efficient and effective watershed management efforts that improve water quality, in addition to other benefits
- Provide a forum for the exchange of information on activities which reduce nonpoint source pollution
- Provide a forum for discussing and implementing project monitoring (before and after)
- Provide a common storage area for all data collected
- Provide a forum for discussion and recommended resolutions to program conflicts
- Work with partner agencies to coordinate the prioritization of watersheds for nonpoint source activities. Prioritization criteria should include local involvement (e.g. locally led watershed committees), effective use of partnerships, and evidence of leveraged sources of funding



- Establish and implement a process for field inspections of nonpoint source mitigation activities on public and private lands to ensure that best management practices are installed and functioning as designed to protect water quality
- Serve as a coordinating body for outreach and education to increase public awareness regarding nonpoint source pollution management

#### Products of the Utah Water Quality Task Force

- The Annual Utah Nonpoint Source Program Report. This report is required by EPA, but is not restricted to 319 funded efforts. The report is prepared by DWQ in coordination with UDAF. The task force assists in providing content, advice and review. The report will highlight the planning efforts, projects, and successes statewide that are possible with the broad coalition of partners encompassed in the Water Quality Task Force
- Presentation of the Annual Utah Nonpoint Source Program Report each year to the Utah Water Quality Board and the Utah Conservation Commission
- Organize a Nonpoint source Conference periodically to share information, highlight successes, and improve networking throughout the state and region
- Provide annual water quality awards to individuals and organizations whose actions or products have protected water quality and exemplified good stewardship of our waters
- Maintain an institutional repository (e.g. a web site) that includes originals or links to documents, reports, and minutes

#### Membership

The Task Force includes representation of those entities with programs that could potentially cause or mitigate nonpoint source water pollution. As new nonpoint source program components are developed and implemented, additional entities will be invited to participate. Current invited members include:

- Local Governments
- U.S. Army Corps of Engineers, Planning Division
- U.S. Department of Interior Bureau of Land Management
- U.S. Department of Interior Bureau of Reclamation
- U.S. Department of Interior National Park Service
- U.S. Department of Agriculture Forest Service
- U.S. Department of Agriculture Natural Resources Conservation Service
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- U.S. Geological Survey
- Utah Association of Conservation Districts
- Utah Department of Agriculture and Food
- Utah Department of Environmental Quality
- Utah Department of Natural Resources
- Utah Department of Transportation
- Utah Farm Bureau
- Utah State University Cooperative Extension
- School and Institutional Trust Lands Administration
- League of Cities and Towns

### ***Grants Reporting and Tracking System***

The Section 319(h) Grant Reporting and Tracking System (GRTS) is a national database developed by EPA to track projects and activities funded with CWA Section 319(h) funds. The primary purpose of the database is to track project progress, accomplishments, funding information and environmental results using several nationally mandated information items that are reported to Congress annually by EPA. Information extracted from this system forms part of the justification to Congress for funding the Section 319 Program. EPA Region VIII uses GRTS to enable the States to electronically fulfill reporting requirements using the Project Evaluation Form and other attachment features in GRTS such as final reports, GIS maps or other project publications.

## Water Quality Information

### *Sampling and Assessment Activities*

In 2010 the State of Utah began utilizing the targeted basin funding approach. There were several reasons that DWQ decided to utilize this approach; to improve monitoring of nonpoint source projects statewide, and to concentrate the number of projects into a targeted area to make it easier to identify the benefits of the projects implemented.

As part of this strategy, DWQ's monitoring section agreed to do an intensive monitoring run within the selected watersheds where the majority of the funding would be spent two years prior to the implementation of the projects identified in the grant work plan. Additional monitoring occurs two years after the projects have been monitored. This data is used to determine project effectiveness and update the watershed plan in that drainage.

Over the past several years DWQ has realized that while the intensive monitoring schedule has been useful, it is necessary to collect data more frequently. Instead of monitoring individual projects, Sampling Analysis Plans (SAPs) are developed for the targeted areas where projects are being implemented. This monitoring includes chemical, physical, and biological monitoring. The frequency of this monitoring is determined by the protocol of each assessment type being done. Chemical samples are usually collected monthly at various sites throughout the watershed, and samples are collected at a minimum of 5 years after the project is completed. This has been very helpful during implementation to help identify additional pollution sources in the watershed, and additional projects that are funded with State nonpoint source funding.

In addition to the more detailed monitoring plan, DWQ has developed a Statewide nonpoint source monitoring SAP. This SAP highlights what sites and parameters will be collected throughout the state to document project effectiveness in areas where large amounts of nonpoint source funding has been spent. This document also identifies the costs associated with collecting and processing the samples being collected. This can ensure that the costs associated with this monitoring will be covered. When needed, additional funding will be requested from the PPG to supplement this monitoring.

The Statewide SAP was developed in a cooperative effort between DWQ's Monitoring, Assessment and Watershed Protection Sections. By working together, each section was able to verify that the samples collected meet all of their programmatic needs. For example, when trying to delist a waterbody from the 303(d) list of impaired waterbodies, certain locations and frequencies of data collection needed to take place. DWQ's Assessment Section was able to identify additional monitoring locations within those assessment units to realize this objective. This process occurs annually, and a finalized SAP is completed annually by the end of June in coordination with the grant awards.

In most cases, the monitoring is conducted by the local watershed coordinators. DWQ has used State nonpoint source funding to purchase the needed equipment to collect field data, and continues to offer training as necessary to both the local watershed coordinators and our partners to verify that they can proficiently collect the needed data. The local watershed coordinators also partner with volunteers from the Utah Water Watch for safety reasons when doing their field work.

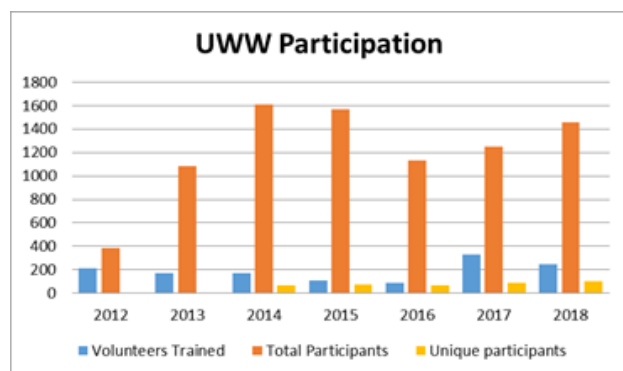
### ***Assessment/ Integrated Report***

DWQ is on-schedule to complete an on-time combined 2018/2020 Integrated Report. New tools are being implemented to automate the water quality assessment, streamline the data submission process and electronically submit public comments. Volunteer Monitoring- Ellen Bailey (USU Water Quality Extension Educator)

In 2018, Utah State University Water Quality Extension (USU WQE) continued to provide and improve water quality education and outreach throughout the state. The goal of USU WQE's outreach program is to improve the public's awareness of water quality issues and reduce the impacts from nonpoint source pollution. USU WQE's efforts reach a diverse audience with information about protecting and improving Utah's water quality. This report includes summaries and highlights of WQE's efforts during 2018.

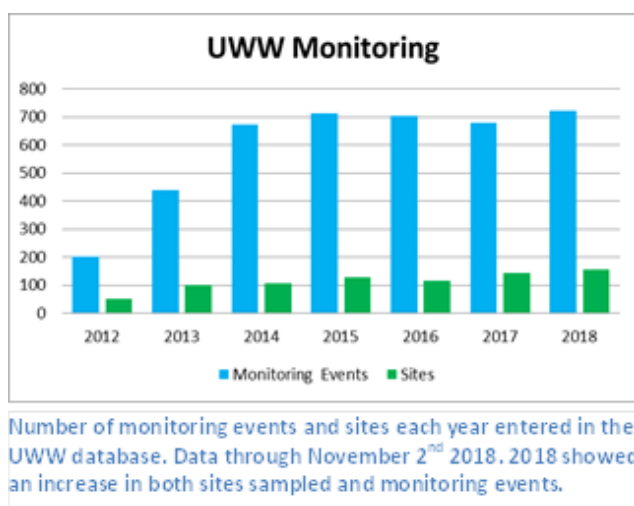
### ***Utah Water Watch Citizen Monitoring***

Finishing its seventh year, Utah Water Watch (UWW) continues to grow as Utah's citizen water quality monitoring network. Most of the participants monitor sites on a monthly basis from April to October and submit data in the publicly available database. Some of the participants work directly with local watershed partners to help collect data as needed.



Graph shows the number of volunteers trained, combined participants from monitoring events and unique trained volunteers participated in data collection. The large number of total participants is due to 12% (>2 participants per sampling visit) of volunteers bring their family, friends or class along to sample. (Data is through Nov. 2, 2018).

**Figure 2. Utah Water Watch Participation**



**Figure 3. Utah Water Watch Monitoring**

This year, UWW conducted 27 trainings in 13 counties. These trainings were primarily Tier 1 monitoring (for screening and educational purposes) and to identify signs of harmful algal blooms, but they also continue to train individuals in advanced monitoring techniques. In total, 248 participants attended trainings in 2018. A new partnership this year with the Dedicated Hunter program has been quite successful, resulting in greatly increased monitoring in the Uinta Basin and Cedar/Beaver Watersheds. The locations for these monitoring sites were areas of particular interest to the DWR's aquatic biologists.

One of the major accomplishments this year was switching the database from the old Django platform at [uwu.usu.edu](http://uwu.usu.edu) to a shared web platform [www.citsci.org](http://www.citsci.org), hosted by Colorado State University and used by a number of citizen science projects. UWW worked with CitSci.org to upload legacy data and worked with volunteers to switch to the new system by the end of June, 2018. The new platform has photo point upload capabilities, provides some on-the-fly graphing, and volunteers will be able to enter data directly into a CitSci.org App in the future. The historic data remain publicly available and the new system provides more opportunities for volunteers to explore trends in their submitted data or at other sites of interest. The Utah Water Watch data can be reached directly by going to: [https://www.citsci.org/CWIS438/Browse/Project/Project\\_Info.php?ProjectID=2043](https://www.citsci.org/CWIS438/Browse/Project/Project_Info.php?ProjectID=2043).

UWW volunteers also contributed to DWQ's E. coli collection efforts at several sites across the state. Citizen volunteers, as well as a new American Water Resource Association student club at USU helped collect and analyze samples in the Logan area. Samples in southwest Utah were processed by volunteers from Canyon Country Discovery Center.

Finally, volunteers assisted with several larger watershed restoration efforts in the state. Volunteers in Logan and Ogden assisted with photo point monitoring associated with restoration efforts along reaches of the Logan and Weber Rivers. The intent in all cases was to document pre and post changes from river and riparian restoration projects. UWW volunteers assisted in arsenic data collection in the Provo River Watershed. The value for Tier 2 (advanced level) volunteer data collection in 2018 (volunteer time and mileage) is estimated at \$6,382.47.

### ***The Ambient Water Quality Monitoring System (AWQMS) Database***

The Ambient Water Quality Data Management System (AWQMS) has been upgraded to version 6.5.

This database update includes several new additions including quality of life changes as well as some new functionality. These new additions include: the ability to preview data prior to submitting it to the Central Data Exchange (CDX), added support for reviewing data from a recently imported dataset, increased ease of navigating between menus, the ability to create a double data-entry feature on data entry pages, and new chart options for displaying, saving, and exporting data.

DWQ data review, data validation and verification process is currently in progress. The river and stream data collected during Quarters 1 and 2 of the 2017 water year has been imported and is currently available online. The data collected during Quarters 3 and 4 of the 2017 water year and Quarters 1-4 of the 2018 water year are undergoing quality control checks and are planned to be imported after validation has been completed. E. coli data collected by DWQ and their partners will be available in AWQMS in early 2019.

Plans for the upcoming year include continued automation of quality assurance reviews for imported data. Efficiency improvements will include developing data import options for cooperative program partners including a rapid data entry tool and the ability to import directly into the database.

### ***Ground Water Protection***

Ground water protection remains a priority in the State of Utah. DWQ and the Utah Division of Drinking Water are currently in the process of identifying areas with source water protection plans that may be good candidates for project implementation to help protect, or restore ground water quality. This is in cooperation with the NWQI program sponsored by the NRCS. It is anticipated that the first source water protection NWQI watershed will be identified by the summer of 2019.

Over the years, several grants have been given to USU to help educate septic owners on how they can properly maintain their septic systems to reduce pollutants from entering into groundwater. Technical service providers that commonly install and maintain those systems are also being trained on how to properly install and pump these systems. These education efforts will continue, and will begin to be expanded to the southern end of the state.

## **Outreach Activities**

### ***Utah State University Extension- Nancy Mesner, USU WQE Specialist***

#### **Utah Clean Water Partnership**

USU WQE continues to support the Utah Clean Water Partnership through the support of the volunteer monitoring network (provide baseline data, notify partners about concerns), assistance with education days (Ephraim Watershed Education Day, Panguitch Watershed Days, NR Field Days in Cache Valley), and updating the shared Utah Clean Water Partnership website ([www.utahcleanwater.org](http://www.utahcleanwater.org)). The audience for this website is growing and USU WQE has had several requests to add additional resources to the site. They continue to work with the partners to update contact information, reports, and calendar events. As of November 8, 2018, the website has had 2,835 new users and 3,561 sessions.

#### **Statewide Water Quality Outreach Campaign**

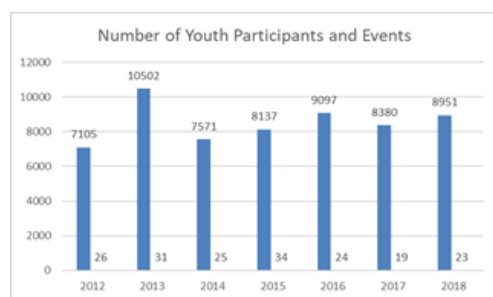
USU WQE is assisting the Utah Water Quality Task Force on a statewide water quality outreach campaign. Over the next few years, the campaign will focus on several nonpoint source pollution issues that continue to be of concern within the state: small farms, human waste in distributed

recreational areas, septic tank management, and wetland protection. In October, they assisted in the distribution of a survey to assess the small farmers' practices and knowledge with respect to water quality. The survey will be used to help tailor a message for the outreach campaign that is planned to start in the spring of 2019. The second topic will address human waste concerns in popular recreational areas statewide. The Water Quality Task Force anticipates using data collected by the Leave No Trace organization to help craft locally relevant messages for Utah landscapes.

#### Youth Outreach and Teacher Training

This year, 103 educators participated in Stream Side Science teacher workshops, either in coordination with the Master Naturalist program, UEN's CMaP workshops and the Weber School District or in Utah Water Watch training. Several of these new teachers have started using the CitSci database for students to record their data and contribute to citizen science.

USU WQE also participated in 20 education programs for kids and 3 general public events geared at youth. Youth activities ranged from water fairs, Cache Valley Natural Resources Field Days, the Utah Envirothon, Gear Up (water-focused engineering camps for teens), 4-H camps, and several classroom visits. They reached 7831 youth at these camps, field days and fairs in 10 counties. General public events where they hosted activities and booths had 1150 participants which included the Bear River Celebration and Jordan River Fest.



Graph shows the number of youth who participated in water quality events with the USU Water Quality Extension and the number of events. Ages range from elementary to high school. (We participated in 23 events in 2018).

**Figure 4. Youth Participation**

This spring, USU WQE published a 4-H Discover manual, “4-H Wonders of Water Club”. The manual provides fun hands-on activities to learn about water properties, water quality and ways to engage in service activities to protect and restore aquatic environments.

The Gear Up Camp provided them with an opportunity to develop some new activities and lesson plans called “Instream Science”, utilizing an underwater Remotely Controlled Vessel (a modified SeaPerch). With their help, students and their teachers constructed the Sea Perches, which were controlled from shore, and collected data using a GoPro, several water quality sensors, and a device to collect water samples at different depths. The students learned how to operate the Sea Perches in several water bodies, and then how to collect and analyze data, which they presented in posters at the end of the weeklong camp.

Another lesson USU WQE published this year is “Pave It or Plant It”, a lesson for 7-12th graders. The lesson has hands-on activities to explore the difference between pervious and impervious surfaces and uses real world hydrologic calculations to compare “natural” and “urban” watershed models. Hydrologic



components from the model can be used in a supplemental activity to assess the amount of pervious and impervious surfaces in the students' community. This lesson was tested at the 2016 and 2017 GearUp camps and were successfully paired with field trips to explore runoff effects in streams, roads and parking areas.

## State/Local Agency Contributions

### ***Utah Department of Natural Resources- Tyler Thompson***

The Watershed Program in the Utah Department of Natural Resources focuses on protecting and enhancing core values for our present and future quality of life including watershed health and biological diversity (structure and function), water quality and yield, and opportunities for sustainable use.

This is accomplished through the Utah Watershed Restoration Initiative (WRI), a diverse partnership of state and federal agencies working together with non-governmental organizations, industry, private landowners, and local elected officials, coordinated by the Utah Department of Natural Resources. Locally led teams identify conservation issues and focus areas using existing plans to address needs at the landscape (watershed) level. Program partners then propose projects to address these needs and receive input from other partners. Projects are reviewed and ranked by the regional teams using a standardized scoring system and then are funded from a variety of sources and contributors.

In fiscal year 2018, the WRI partnership (99 partners participating) completed 210 projects restoring 172,000 acres of uplands and 193 miles of stream and riparian areas. Just over 59,322 acres of the total acres restored represent fire rehabilitation seeding following an active 2017 summer fire season. Many of these projects are designed with the goal of improving water quality and quantity. For a full list of WRI projects completed go to: <https://wri.utah.gov/wri/project/search.html?status=Completed>. Through the partnership effort, general funding (\$1.95 million) to the Watershed Program from the Legislature was successfully leveraged at over 22 to 1 in on-the-ground projects.

The long-term results from this effort will be reduced acres burned by wildfires and resulting fire suppression costs, reduced soil loss from erosion, reduced sedimentation and storage loss in reservoirs, improved water quality and yield, improved wildlife populations, reduced risk of additional federal listing of species under the Endangered Species Act, improved agricultural production, and resistance to invasive plant species.

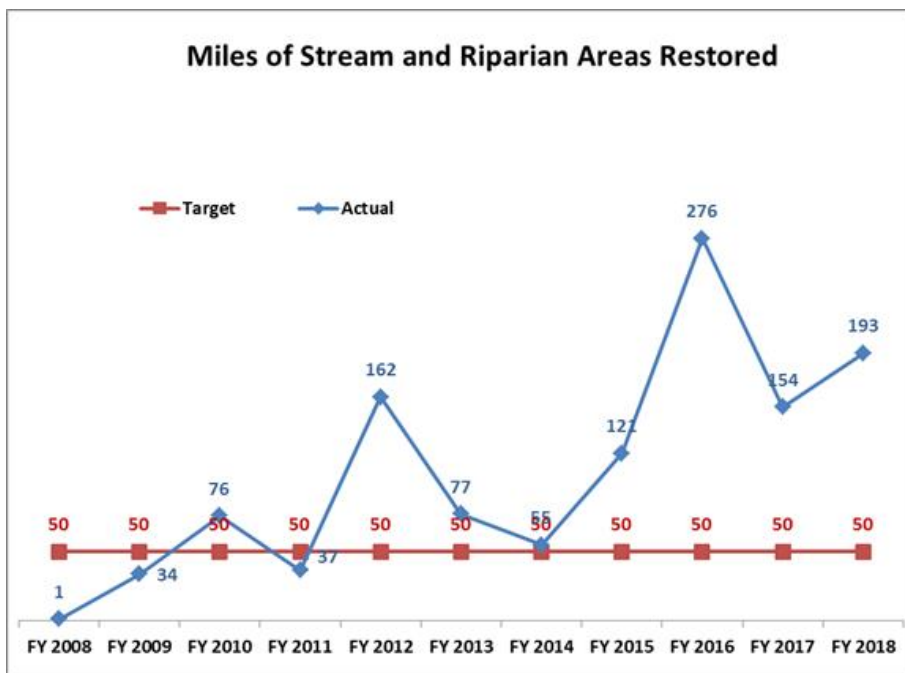


Figure 5. UWRI Miles of Streams and Riparian Areas Restored

### *Utah Department of Agriculture and Food- RJ Spencer*

UDAF regularly collaborates with state and federal partners to assist agricultural producers to maintain viable and productive agricultural lands and to protect Utah's natural resources. A strong partnership provides technical and financial resource options to Utah's agriculture producers while promoting agricultural sustainability. A watershed approach is used to work cooperatively with private land owners to prepare conservation plans that will solve resource problems. Funding options are available from multiple state and federal programs.

#### Utah Conservation Commission (UCC)

The UCC is authorized under Title 4, Chapter 18 of the Utah Code. The act's Purpose Declaration states that "The Legislature finds and declares that the soil and water resources of this state constitute one of its basic assets and that the preservation of these resources requires planning and programs to ensure the development and utilization of these resources and to protect them from the adverse effects of wind and water erosion, sediment, and sediment related pollutants." With this in mind, the Legislature created in 1937 this unique state government entity and it has been active continually since, evolving to meet new environmental and social conditions. Today, this newly changed 12 person board strives to protect the natural resources within the state. The UCC utilized UDAF resources in the Agriculture Resource Development Loan (ARDL) program to provide the Conservation District's with funding for important conservation projects. This year, 5 projects across Utah were partially funded; four of these were water quality projects, improving the water quality and quantity throughout the state.

#### Utah Agriculture Certificate of Environmental Stewardship (ACES)

The ACES assesses storage, handling and application of fertilizer, pesticides, fuels, and hazardous wastes. It also evaluates grazing management, soil erosion, cropping and irrigation systems, storage and application of manure, and other agricultural practices that may have an impact on our natural resources.

### Utah Grazing Improvement Program (UGIP)

The Utah Grazing Improvement Program is a broad-based program focused on rangeland resource health. Its mission is to “improve the productivity, health and sustainability of our rangelands and watersheds.” A keystone benefit is the reduction of nonpoint source water pollution and the protection and improvement of water quality and habitat components.

A staff of Grazing Coordinators located in six regions throughout the state, offers the livestock industry sound information and assistance regarding grazing issues. A main focus of the program is to invest in and help facilitate improved resource management. Grants are provided for projects that will enhance grazing management and rangeland resource health.

### Agriculture Resource Development Loan Program (ARDL)

Projects eligible for ARDL loans include animal waste management, water usage management (irrigation systems), rangeland improvement, on farm energy projects, wind erosion control, disaster mitigation and cleanup, water conveyance projects for both private individuals and canal companies, and providing crop storage facilities and other farm structures outlined in the ARDL Policy. These projects all have a direct impact on protecting our natural resources, preventing or reducing pollution both to water and air and in sustaining the economic viability in rural communities.

The Loan section has a second program, Rural Rehabilitation Loans. Its purpose is to finance land acquisitions for beginning farmers and rancher when conventional lending is not available. The program may also help farmers and ranchers with troubled debt that can be restructured through refinance of long term debt with well secured, low cost financing.

The loan section also underwrites loans for the SRF under the DWQ’s financing projects that eliminate or reduce nonpoint source water pollution on privately owned lands. That program was recently expanded to include grants as well as loans. UDAF also underwrites loans for the replacement of Petroleum Storage Tanks for the DEQ. This program is designed to assist owners and operators in rural Utah by upgrading, replacing, or closing existing underground tanks to comply with federal regulations and to protect the environment.

### Colorado River Basin Salinity Control Program

The State of Utah currently receives approximately \$1.5 million yearly from the Colorado River Basin States Salinity Control Forum to reduce salt that enters the Colorado River, which has increased significantly from the initial \$350,000 received in 1997.

The irrigation projects installed through the salinity program are an economic benefit to agriculture in eastern Utah. The new irrigation systems increase watering efficiency, decrease water loss through seepage, and improve crop production and uniformity

### Agriculture Sustainability Task Force

To better understand and address the role that agriculture plays in promoting Utah’s security, economy, society, culture, and well-being, a Utah Agriculture Sustainability Task Force gathered and analyzed data and information to make recommendations to promote the sustainability of all types of agriculture. Eight major issues emerged:

- Food Security
- Invasive Species

- Grazing Management
- Immigration
- Urban Agriculture
- Agriculture Promotion and Profitability
- Next Generation Farms
- Irrigation Infrastructure

In order to address these issues, the Task Force developed a list of proposed actions which can be found at <http://ag.utah.gov/conservation-environmental.html> that state, local and federal governments and the private sector can implement. Agriculture sustainability and protection of natural resources go hand-in-hand.

#### Resource Assessments

Utah's local Conservation Districts are working in each county to prepare a county-wide Resource Assessment to identify local resource concerns. In preparation for that effort, each county has prepared a list of priority resource concerns identified by the local work group, and has submitted those to UDAF. Subsequently, UDAF has prepared a Statewide Resource Assessment which identifies all county priorities. The Resource Assessments will be one tool used to fund priority projects.

#### Information and Education

UDAF is willing to provide assistance to Utah agricultural groups, and fairly represent agricultural interests at the many committee meetings staff are involved with. Some of those committees include:

- Utah Conservation Commission
- Utah Association of Conservation Districts
- Local Conservation Districts
- Utah Water Quality Task Force
- Utah Nutrient Core Team
- Utah Animal Feed Operation Committee
- Local Watershed Committees

UDAF works closely with Utah Legislators to make sure that agriculture is fairly considered in any legislation that is considered. UDAF also maintain an up-to-date website ([www.ag.utah.gov](http://www.ag.utah.gov)) that provides information to agriculture producers and the public.

### ***Utah Division of Wildlife Resources- Don Wiley***

#### Stream Restoration Training

DWR invested about \$30,000 in Blue Ribbon Fisheries Advisory Council and Habitat Council funds to send a biologist from each region to stream restoration and wetland delineation training during fiscal year 2018. Given the degradation of many instream and riparian habitats throughout Utah, the need for extensive stream restoration is apparent. Currently, DWR restoration biologists are working to address this need by implementing projects on steams and associated watersheds throughout Utah. With proper training, more balanced staffing, and an exchange of information among trained DWR personnel, the number of stream restoration projects undertaken annually throughout Utah can be maintained.

### **Statewide Coordination**

The DWR Stream Team, made up of 15 stream restoration professionals in both the DWR Aquatics and Habitat sections, met 2 times during FY 2018 to (1) track progress of ongoing stream restoration efforts, (2) plan and prioritize upcoming FY 2019 project implementation, (3) ensure that actions were scheduled to dovetail with existing partner efforts (e.g., DEQ's Targeted Watershed schedule), and (4) discuss partnership expansion with other entities responsible for stream restoration and water quality actions statewide (e.g., NRCS, UDAF, and DEQ).

### **Northern Region**

#### **Huff Creek Riparian Improvement Project**

Huff Creek is a small stream which drains into the Chalk Creek drainage. The drainage has been a focus for many years for improving water quality, riparian health and cutthroat trout populations. The project included fencing both sides of Huff Creek for approximately 4.75 miles. It divided a large 5,500 acre pasture into two separate pastures used by approximately 1,300 cows for grazing purposes. Huff Creek already divides the pasture east to west. A large water project was started by the landowner to place troughs on the north side of Huff Creek in 2015 and 2016. This gives livestock additional water sources besides Huff Creek to water. Another project is going forward with the landowner and UDAF to construct and install additional water troughs and water lines on the south side of Huff Creek to benefit livestock and wildlife. Bonneville Cutthroat Trout are found upstream of this large pasture as well as beaver. By protecting this riparian area, trout and beaver will start to fill in downstream as habitat improves.

#### **Fort Buenaventura Pond Rehabilitation**

This was a cooperative project between Weber County Parks Department and the DWR. The purpose of this project was to renovate the Fort Buenaventura Pond to improve aquatic resources. The pond was deepened by removing nearly 900 dump truck loads of silt from the pond. In addition, the original sediment retention pond was cleaned and a second retention pond was created to ensure longevity of the Fort Buenaventura Pond.

### **Northeastern Region**

#### **Meadow Creek Stream Restoration**

In the fall of 2013, severe flash flooding occurred in Meadow Creek. This stream holds a population of North Tawaputs Colorado River Cutthroat Trout (CRCT) and is a conservation population for this species. The creek was heavily damaged and several areas were impacted with head cutting, stream bank erosion and channel alteration. During FY18, the riparian community was improved by planting coyote willow, green willow and Fremont cottonwood cuttings along 1.2 miles of Meadow Creek. In addition, several erosion control structures and channel sloping occurred. Fish habitat structures were installed to increase fish capacity. Beaver dam analogues were constructed to 1) increase available fish habitat 2) raise groundwater table to better naturally irrigate riparian vegetation 3) provide additional stream water storage capacity and buffer capacity and, 4) provide a sediment sink that may allow the stream to aggrade and better connect with the floodplain.

### **Central Region**

#### **Main Creek Restoration Phase IV**

Main Creek is the largest tributary of the 45,000 acre Wallsburg Watershed. Main Creek and its tributaries are home to a unique assemblage of aquatic species, including Bonneville Cutthroat Trout, Southern leatherside chub, and Columbia spotted frog. Deer Creek Reservoir, located downstream,

does not meet its criteria for its aquatic beneficial use due to low dissolved oxygen concentrations and elevated suspended solids. Main Creek is one of the four major monitored inputs to Deer Creek Reservoir and accounts for about 17% of the Phosphorous load into Deer Creek Reservoir. The Main Creek basin is highly fragmented with diversion structures, impassable culverts, and numerous seasonally dewatered reaches. Several stream restoration techniques were implemented to restore the natural function of the stream. DWQ has established multiple locations within the watershed to monitor water quality.

### **Spanish Fork River Channel and Bank Habitat Improvements**

Russian olive, tamarisk, perennial pepperweed, scotch thistle, and phragmites from the north side of the one mile reach of the Spanish Fork River that flows through the Spanish Fork Sports complex. All vegetation was removed and chipped by Spanish Fork City. Stumps were treated with Garlon or Tordon as per standard operating procedures for woody invasives removal. This is the first phase of improving the water quality in the Spanish Fork River. Future phases will include more aggressive approaches like stream bank re-alignment, instream habitat structures, and sloping of stream banks.

### ***Southern Region***

### **Riparian Tree and Shrub Planting - Beaver River, East Fork of the Sevier River and Otter Creek River**

Bare root trees and shrubs were purchased from various nurseries. A four-person conservation corps crew was hired for three weeks to plant the bare root stock and willow cuttings on stream enhancement projects that have been completed in the past and other appropriate areas that have proper livestock grazing management in place. Planting projects were completed in March and April 2018.

All of the areas are fenced and the fenced areas are actively maintained. Grazing is excluded along the riparian corridor in most of the areas. There are also grazing plans in place with the landowner or permittee in all areas to manage for establishment of woody riparian vegetation. Planting locations will be monitored and it will be determined if additional plantings are needed.

### **Water Quality and Fisheries Improvement on the Upper Sevier River near Hatch, UT – Year 6**

DWR utilized heavy equipment to haul rock from a nearby BLM rock pit, install rock and log structures in the stream, and slope streambanks. A four-person conservation corps crew was hired for a total of two weeks to plant bare root tree and shrubs and willow stakes along the stream. Finally, two cattle guards were installed on a county road and a fence contractor was hired to repair and construct fence along the project area where needed to manage livestock grazing. In addition, the following were completed during this phase:

(1) Large woody debris and rock structure installation - In October and November of 2017, private contractors hauled large tree and rock material to the project area and the DWR Heavy Equipment Crew operated the necessary heavy equipment (e.g., excavator and front-end loader) to install large woody debris and rock structures in the stream and along banks. The structures added cover for fish, helped to address problems associated with elevated rates of streambank erosion (e.g., recruitment of fine sediment or high total phosphorous loads), and protect cattle crossing structures to manage livestock grazing.

(2) Streambank shaping and sloping - At the same time structures were installed, all bare, vertical, eroding banks were shaped and sloped back to at least a 2:1 slope in a manner intended to promote reconnection of the river with the floodplain and help address streambank erosion problems. The stream channel slope, pattern, and location were not changed. Work occurred only on existing stream



banks. The stream was narrowed and deepened in some locations, but cross-sectional area of the channel was maintained.

(3) Riparian planting - In March and April of 2018, all disturbed ground and areas lacking adequate riparian vegetation were planted with willow cuttings and bare root riparian trees and shrubs (e.g., water birch, cottonwood, red-osier dogwood, chokecherry, elderberry and golden current) to add cover and address streambank erosion problems. A conservation corps work crew was hired to complete the planting work.

(4) Livestock management - In the late summer and fall of 2018 (August-October), two cattle guards were installed on a county road and a fence contractor repaired and constructed some new fence along the project area where needed to manage livestock grazing (which will also help to protect large woody debris structures, riparian vegetation, and streambanks over the long-term). Livestock grazing will not occur within riparian areas for a minimum of five years. Thereafter, livestock grazing within riparian areas will occur at an intensity, duration, timing, and season such that woody riparian vegetation is not degraded or lost due to grazing by livestock.

### **Southern Region Riparian Restoration**

Beavers have been removed from many drainages and watersheds where they have historically occurred. Beavers contribute important benefits to watersheds such as recharging and raising ground water tables, improving riparian vegetation, expanding wetlands, slowing flood waters, reducing erosion, improving water quality, providing habitat for aquatic species and other wildlife, and providing more biodiversity to the landscape. During FY18, beavers were relocated to Deer Creek (Dutton), Baker Spring (Wayne County), Shingle Creek (Beaver), North Creek (Beaver), Chokcherry (Millard), and Bear Creek (Millard).

## **Federal Agency Contributions**

The original MOU between the DEQ, the US Forest Service, and the Bureau of Land Management was executed in 1992. This MOU was updated, reviewed, and signed by all parties in 2017. The following entities are a part of the newly revised MOU: US Forest Service, Bureau of Land Management, National Park Service, Utah Department of Agriculture and Food, Division of Forestry, Fire and State Lands, Utah Division of Wildlife Resources, and DEQ, DWQ. The MOU is to be reviewed and updated as needed every 5 years.

### ***Natural Resources Conservation Service- Norm Evenstad***

NRCS employees work in partnership with land users to conserve natural resource on private lands. These employees are distributed among 26 field offices and 2 area offices that cover the state of Utah. The individual field offices are managed by District Conservationists who may cover multiple offices. NRCS employees along with Utah Association of Conservation District (UACD) employees report progress on activities in the USDA-NRCS performance results system.

Financial and technical assistance was provided to land owners, sponsors & managers in Utah during FY2018 through the various USDA-NRCS programs. Four Comprehensive Nutrient Management Plans (CNMP) were written, and two applied, along with practices relating to nutrient and waste management during FY2018.

The results shown in Table 12 in the Appendix are for all conservation practices planned and applied during fiscal year 2018. Several practices have direct & indirect water quality benefits that can result in overall benefits for surface and ground water quality.

#### **NRCS Water Quality Initiative (NWQI) in Fiscal Year 2018**

The NWQI establishes priority watersheds nationwide to help farmers, ranchers and forest landowners improve water quality and aquatic habitats in impaired streams. NRCS offers producers an opportunity to implement conservation and management practices through a systems approach to control and trap nutrient and manure runoff. Qualified producers can receive assistance for installing conservation practices such as cover crops and filter strips.

For FY2018, NRCS and DWQ recommended projects in the Hillsdale watershed located on the Upper Sevier River in Sevier County and in the Chalk Creek watershed located in Summit County.

Partners sometimes offer financial assistance in addition to NRCS programs. Practices planned with NWQI assistance may include: Waste Storage Facility, Pond Sealing/Lining, Solid/Liquid Waste Separation Facility, Waste Transfer, Pumping Plant, Fence, Irrigation System, Sprinkler, Pumping Plant, Structure for Water Control, Irrigation Pipeline, Forage and Biomass Planting, Obstruction Removal, Nutrient Management, Irrigation Water Management, Riparian Herbaceous Cover, etc.

NRCS will continue to coordinate with local and state agencies, conservation districts, nongovernmental organizations and others to implement this initiative. This strategic approach will leverage funds and provide streamlined assistance to help individual agricultural producers take needed actions to reduce the flow of sediment, nutrients and other runoff into impaired waterways.

#### ***Bureau of Land Management- Ken Bradshaw***

Utah BLM is in its thirteenth year of cooperative implementation of the statewide WRI through its participation in the Utah Partners for Conservation and Development. This is a multi-agency federal, state, and private partnership treating lands for watershed improvement and long-term habitat restoration. Funds are contributed by partners, including non-governmental organizations (NGOs) and wildlife groups. Projects are submitted and prioritized by regional teams prior to submittal for final approval and funding by the statewide oversight team. BLM funds primarily come through the Wildlife, Fuels, and Healthy Lands Initiative programs. Moab BLM continues to participate in the agreement with the Dolores River Restoration Partnership, which has multiple NGOs, private, BLM, and other federal partners focusing efforts on the Dolores River.

Under the HLI/WRI program, over 78,000 upland acres, 2,100 acres of aquatic-riparian areas, and 60 stream miles were treated on BLM Utah managed lands in 2018. Treatments include riparian restoration, tamarisk and Russian olive removal, sagebrush restoration, removal of juniper, wildlife and rangeland vegetation enhancement, and other similar projects. The DWR website has interactive maps and project descriptions: <https://wri.utah.gov/wri/>.

The table 14 in the appendices is a tally of the projects completed during FY2018. These are interagency funded projects and funding for most projects is based on the state fiscal year so some of these were actually started in the fall of 2017. More information can be found by searching the database utilizing the project number and various report features.

#### **Grand Staircase Escalante National Monument (GSENM)**

GSENM and the Kanab Field Office (KFO) participated in the cooperative water quality monitoring program with DWQ, collecting field data and water chemistry samples throughout the area. Sample site and water quality parameter selection was coordinated with DWQ staff. Sampling focused on perennial streams in GSENM and KFO that were included on the DWQ's List of Impaired Waters.

### *Projects*

#### **Salinity Structure Repair**

In FY2018, GSENM and KFO received funding from BLMs Salinity Program to reduce salt loading to the Colorado River and tributaries originating on BLM lands. In support of this program GSENM and KFO are in the process of rehabilitating sediment retention structures that were established in the 1950's and 1960's on the landscape below saline soils. Renovations typically include dam/spillway repair, head cut stabilization, sediment removal and upland stockpiling/stabilization, and removal of non-native & invasive vegetation. In 2018, work was completed on 46 structures in GSENM (37) and KFO (9). This work included removal of over 5,000 tons of salt from the retention structures and drainage system.



*Wolverine Loop Road structure in the Circle Cliffs (2018).*



*Black Rock Flat structure south of Alton (2018).*



### Telegraph Flat Head cut & Gully Stabilization

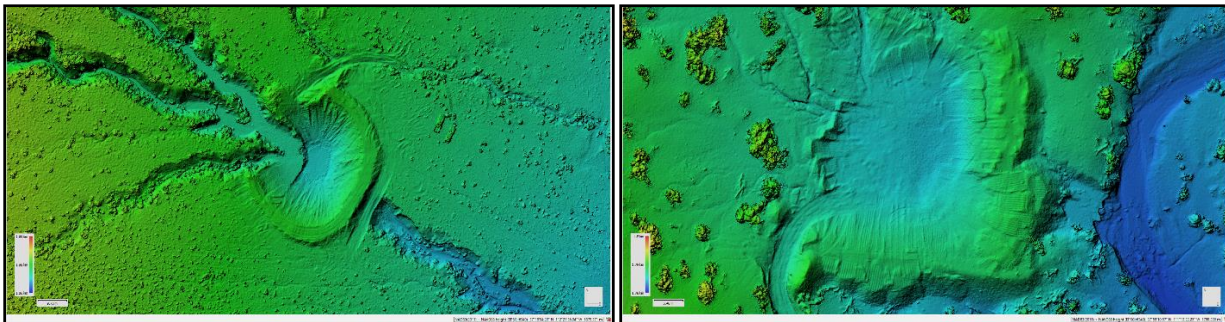
In FY2018, GSENM began the first phase of a multi-phase project to stabilize active head cutting on Telegraph Flat, near the southern border of the Monument. During phase 1, contractors installed two rock mulch rundown structures to stabilize wide, incised head cuts. The rock mulch rundowns were constructed by building a slope through the head cuts and reinforcing the slopes with geotextile webbing filled with rock and soil. Collector structures were built at the top of the rundowns to direct water onto the rundown structures (see photo below). These structures are designed to reduce the energy of water causing head cutting and prevent the head cuts from migrating further upstream.



*Rock mulch rundown structure and collector installed to stabilize active head cutting on Telegraph Flat (2018).*

### Assessment of erosion, sediment yield, and salinity loading on BLM administered lands

In FY2017, BLM funded a multi-year research study that will be conducted by USGS to quantify sediment and salinity loading rates in the GSENM and KFO. This study will determine sediment yields in watersheds above sediment retention basins using repeat topographic surveys and derived Digital Elevation Models (DEMs) of differences. Topographic data will be processed using Structure from Motion (SfM) photogrammetry. In FY2018, staff from the USGS Utah Water Science Center surveyed 17 salinity control structures on the GSENM and KFO using SfM technology. These structures will be surveyed annually for several years to determine sedimentation rates for GSENM and KFO areas.



*DEMs produced from SfM assessments of two salinity control structures in May, 2018.*

## Canyon Country District/ Moab and Monticello Field Offices

The Canyon Country District Office conducted extensive monitoring efforts and implemented several projects in FY2018 to address and better understand non-point sources of pollution such as increased salinity and sediment loading. Many of these projects rely heavily on well-established and productive partnerships with the Moab Area Watershed Partnership and the Dolores River Restoration Partnership.

### *Planning*

The Monticello Field Office worked with DWQ and the San Juan County Water Conservancy District to complete a Watershed Restoration Plan for the Montezuma Creek Watershed. This plan describes current conditions and highlights several projects that could enhance water availability and improve water quality conditions in Montezuma Creek and tributaries including Verdure Creek. Potential projects include construction of several large reservoirs and Pinyon-Juniper removal.

### *Monitoring*

BLM participated in the cooperative water quality monitoring program with DWQ, collecting field data and water chemistry samples throughout the District. Sample site selection was coordinated with DWQ staff and a detailed Sampling Analysis Plan was completed for work in 2018. Sample sites focused on the new Bears Ears National Monument in the Monticello Field Office and streams on the DWQ's List of

### *Impaired Waters within the Moab Field Office.*

Other inventory and monitoring efforts within in the Canyon Country District included a comprehensive spring monitoring project and data collection in aquatic systems following BLMs Aquatic Assessment Inventory & Monitoring protocols. The spring inventory and monitoring project focused on areas with high potential for potash development, areas with minimal surface water resources, and within the new

## Bears Ears National Monument.

The Monticello Field Office coordinated with the UGS on a monitoring proposal related to a large Pinyon Juniper removal project in the Montezuma Creek Watershed. This monitoring effort includes baseline data collection of spring flows, shallow groundwater levels and soil moisture conditions in both the project area and a control area. The monitoring will begin in FY19 and continue for several years before the Pinyon Juniper removal work is implemented.

### *Projects*

#### **Mill Creek Watershed Improvement Project**

The Mill Creek Watershed Improvement Project is ongoing with additional funding from DWQ (supported by the Moab Area Watershed Partnership) and the Utah Watershed Restoration Initiative. This project involved removal of invasive Russian Olive trees along one mile of stream and retreatment of three miles of stream (i.e., cutting re-sprouts). Ravenna Grass removal is ongoing along 12 miles of stream on BLM lands. These efforts along with other watershed improvement work such as closing and re-seeding and re-planting disturbed areas and duplicate hiking trails are helping reduce sediment loading and improve water quality in Mill Creek.



*American Conservation Experience (ACE) crews transplanting native plants in a disturbed area near Mill Creek.*

BLM has funded a USGS stream gauge on Mill Creek below a large irrigation diversion structure over the years to ensure minimal stream flows as required by the BLM right of way. This continues to be a successful effort to improve stream temperature conditions as identified in the 2002 Total Maximum Daily Load.

### **Dolores River Restoration**

Restoration work along the Dolores River is ongoing with the support of the Dolores River Restoration Partnership and the Utah Watershed Restoration Initiative. This year the Canyon Country Youth Corps closed and rehabilitated over 20 acres of disturbed area at Roberts Bottom with fence construction and seeding.



*Canyon Country Youth Corps working at Roberts Bottom on the Dolores River.  
Saline Soils Projects*

The Moab Field Office constructed a streambank stabilization structure near the mouth of Onion Creek to protect a small campground. This project was implemented using FY17 funding, after NEPA was completed in FY17. This simple structure will help reduce erosion and salinity contributions to the Colorado River.





*Rock lining a section of unstable streambank on Onion Creek, constructed by BLM in March 2018.*

The Moab Field Office continues to coordinate with and provide funds for the Grand County Road Department to construct and maintain stabilization structures in Onion Creek Canyon. These simple gabion basket and barb structures provide stabilization to the road- streambank interface, reducing flood damage and subsequent erosion and salinity contributions to the Colorado River. This work leads to improved water quality conditions on Onion Creek which is listed by DWQ as impaired and not meeting state standards for stream temperature and TDS.



*Streambank stabilization structure in Onion Creek Canyon, maintained by Grand County Road Department with BLM funding.*

Cedar City Field Office

### **Projects**

#### **Birch Creek Restoration Project**

In FY2018, the BLM, DWR, and Anabranch Solutions installed Beaver Dam Analogs (BDAs), Post-Assisted Log Structures (PALS), and other woody structures in Birch Creek, near Beaver, Utah as part of a demonstration project designed to highlight a range of low cost, simple stream restoration structures. These structures are designed to increase in-channel roughness and complexity, and promote incision recovery and channel-floodplain connectivity, thereby improving the physical condition

and ecological function of the area. The goals of the restoration were to improve in-stream habitat for native Bonneville cutthroat trout and increase native riparian vegetation. Sixty restoration structures were built along 1.75 km (~ 1.1 miles) of Birch Creek. Structures included primary dams, secondary dams, constriction dams, debris jams, and channel-spanning structures.



*BDA installed in Birch Creek*



*Constriction Dam installed in Birch Creek*



## ***Vernal Office Arid Land Study***

The purpose of this study is to provide BLM land managers detailed reclamation guidelines that will provide successful and sustainable strategies to reclaim disturbed lands in arid environments.

### **Objectives**

- Minimize weed establishment, mostly cheatgrass and halogeton by appropriate cover crop selection and timing of planting.
- Restore lands impacted by soil salinity.
- Select appropriate revegetation species and determine the best planting methods to ensure the establishment of desirable species will inhibit the spread of invasive weeds.

### **Background**

This study was established in August 2014 that evaluated different carbon amendments, and barley cover crop for reclamation success. Specifically treatments consisted of the following amendments: Control-no carbon; Wood chips; Activated carbon; Biochar; and Compost. After two years of monitoring it has been determined that, the carbon amendments had no effect on inhibiting the growth cheatgrass and halogeton. Activated carbon, wood chips, and biochar facilitate growth.

The greatest factors limiting the successful restoration and revegetation of P&A well pads by desirable native species were lack of soil water, soil salinity and sodicity, shallow soils, and soil compaction. Monitoring of these plots is ongoing.



*Emergence of drilled seeded winter wheat cover crop three weeks after planting*

### ***National Park Service- Rebecca Weissinger***

The National Park Service is a significant land manager of 2.1 million acres in Utah, or about 3.9% of the state, and hosts over 12 million visitors per year. National Park System units have a dual Congressional mandate to preserve natural and cultural resources and to provide for their enjoyment by the public in such a manner that will leave them unimpaired for future generations. There are 13 National Park System units in Utah. On-going water quality monitoring, in cooperation with the State of

Utah, occurs at seven of these National Park units. In addition to routine water quality monitoring, sampling for pesticides, wastewater indicators, pharmaceuticals, and personal care products also occurred at two national park units in Utah in cooperation with the EPA and USGS.

The National Park Service continued treating non-native tamarisk trees and herbaceous non-native invasive plants at priority sites in the riparian corridors of the Colorado and Green Rivers in Canyonlands National Park. The primary benefits of this project include restoration of native plant communities, protection of campsites and native tree stands through reduction of fuels from beetle-impacted tamarisk stands, and improved visitor experiences. Indirect benefits include overall reduced erosion of bank sediments into the river as fire frequency and fire size is reduced. Russian olive removal also occurred along the Green River in Dinosaur National Monument.

Capitol Reef National Park continues to cooperate with DWQ in their E. coli monitoring program. A TMDL process for E. coli impairment in the Fremont River was initiated in 2018.

Glen Canyon National Recreation Area continued an extensive quagga mussel containment effort focused on educating boaters to clean, drain, and dry their equipment after exposure to Lake Powell, which is infested with quagga mussels. The program is a cooperative effort with Utah and Arizona. The NPS and State of Utah staff made nearly 170,000 direct boater contacts and used many other outreach and regulatory control approaches. The effort has been highly successful; out of hundreds of thousands of vessel launches on Lake Powell in 2018, only 2 vessels were identified that did not follow the laws and prescribed procedures. Water quality sampling was conducted on 12 lake trips in selected sites around Lake Powell to document basic water quality.

A cooperative effort with DWQ to resolve E. coli contamination in the North Fork Virgin River upstream from Zion National Park continued in 2018. Several agencies and landowners were involved in seeking a solution to high levels of E. coli carried into the stream by irrigation return flows. Possible solutions are being tested, including changes in livestock and irrigation management. In 2018 one irrigator chose not to run livestock on his lands. As in 2015 and 2016, there was a water right call on the river and irrigation ceased on the BLM pastures beginning in July of both years. E. coli was monitored on seven sample dates in 2018.

### ***Federal Consistency Review and NPS Project Tours for FY-18***

Unfortunately due to a particularly bad fire year, the USFS was unavailable to do a federal consistency review tour in FY-2018. While a tour was scheduled to take place in the Raft River Mountain Range in Northern Utah, the tour was cancelled due to staff being pulled to other areas of the state in FY-2018.

### **EPA Project Tour 2017**

The EPA project tour was conducted from September 18- 20, 2017

#### ***Location:***

Jordan River / Logan River/ Chalk Creek Watershed/ Wallsburg Watershed/ Indian Creek (Strawberry Reservoir Watershed)/ Pelican Lake

#### ***Participants:***

Gary Kleeman (Environmental Protection Agency), Jim Bowcutt Sandy Wingert, Mike Allred, Kari Lundeen (Utah Division of Water Quality), Eric McCulley (River Restoration), Chuck Tarver (City of West Jordan), Daniel Gunnell, Jay Olsen, Dax Reid, Gabe Murray, Andy Pappas (Utah Department of Agriculture and Food), Justin Robinson (US Forest Service) Trina Hedrick (Utah Division of Wildlife Resources)

*Day 1 September 18th*

### **Big Bend Restoration Project**

The Big Bend restoration project is a large scale restoration project located on the Jordan River in West Valley, Utah. This project is focused on restoring the riparian corridor, improving wildlife habitat, and helping improve recreational opportunities. The project consists of 70 acres of undeveloped land. This project will reroute the Jordan River through the 70 acres parcel, thus reducing the amount of erosion that is currently taking place along the main stem of the Jordan River. It will also divert water through a wetland/pond complex that will be used as a community fishing pond.

In 2018, a small section of the Jordan River (275 linear feet) was restored using State nonpoint source funding. The bank was sloped back, and rock structures were installed. Planting will occur later in the fall as weather conditions become more conducive to plant growth.



*Big Bend Restoration Project*



*Future Restoration Site*

### **Logan River Restoration Project**

Four project locations were visited along the Logan River. The first of which was the Stuart Nature Park restoration project. This project was completed in 2017 using State Nonpoint source funding. A little over 100 feet of streambank was sloped back and rock and vegetation was installed to help protect the toe of the bank.

The second site visit was to a proposed restoration site on the Logan River where it crosses Main Street near 600 South. Currently, the channel is constricted by development on both sides of the channel. The proposed project will demolish the houses on the North side of the river, and the channel will be widened to help restore the flood plain and its functionality along 800 feet of the Logan River. This project will consist of Section 319 funding, as well as State Nonpoint Source grants. The City and developer will also contribute to the project. This project will begin the implementation phase in the fall of 2019.





*Stuart Nature Park*



*Main Street Restoration Project*

The Rendezvous Park project was a large undertaking that consisted of funding from the Willard Bay Chevron mitigation funding, Section 319 funding, and funding from Logan City. This project rerouted the Logan River through a wide riparian corridor allowing for the river to better fill its flood plain. It also created large pools that heavy equipment can access. This will allow sediment to be deposited, and removed as needed. This project consisted of nearly 4,900 linear feet of the Logan River. The project was completed in the spring of 2018, and additional work is scheduled to take place in the near future upstream of this location.

Another common practice in the Logan River is the clearing and snagging of black willows, a nonnative tree found in abundance on the Logan River. These Black Willows will grow quickly and die, dropping large snags and limbs in the river. This can result in large scale erosion as the branches divert the flow of the river. In one location a landowner cleared and snagged nearly 2 river miles and installed bank stabilization practices in locations where erosion was occurring.



*Rendezvous Park Restoration*



*Black Willow Clearing and Snagging*

## **Day 2**

### **Chalk Creek Watershed Restoration**

The most common source of Nonpoint source pollution in the Chalk Creek Watershed comes from grazing sources. The local watershed coordinator has been working with local landowners to lessen the impacts to the riparian corridor as a result of grazing. While fencing animals out of the riparian corridor is still utilized in the watershed, it has become more popular to help entice the cattle out of the riparian corridor by developing water in other locations on the ranch. One project consisted of the installation of a large pumping plant and solar panel that pumps water to the top of a ridgeline. Water is then delivered to 12 water troughs along that ridgeline. The project was installed in the summer of



2018, but the benefits were already obvious. Cattle were spending more time on the ridgelines, and feed that was seldom grazed was finally being utilized.



*Chalk Creek Grazing System*



### **Wallsburg Watershed Riparian Restoration**

The Wasatch Conservation District is moving into the final phase of the Wallsburg Restoration project. This final phase is focused on taking a section of Main Creek that was channelized, and restoring it by creating a more natural, sinuous channel. During the visit, the construction crews were moving soil, and appeared to be making good headway. The section that was treated in the fall of 2018 consisted of 1700 linear feet of restored river. In the spring of 2019 the District will reconstruct another 3,800 feet of stream channel. This project was funded largely by Regional Conservation Partnership Program (RCPP) funding from the NRCS, as well as Section 319 funding from EPA.



*Wallsburg Restoration Project*

### **Day 3**

### **Indian Creek Road Relocation**

With the work done on the Strawberry River, much of the work in the Strawberry valley has been focused on reducing sediment loading into Strawberry Reservoir from the smaller tributaries. Indian Creek was identified as a potential sediment and phosphorus source. To remedy the problem, the USFS decommissioned a road that ran up the bottom of Indian Creek and constructed a road higher on

the ridgeline. This project helped improve over 2 miles of riparian corridor, and greatly reduced the sediment load coming from Indian Creek.



*Indian Creek Road Decommissioning*



### **Pelican Lake**

Pelican Lake was once a prized warm water fishery in the State of Utah, but in the last several years it has been in decline. Much of the decline is a result of the nutrient loading coming from the tributary to the reservoir. In an attempt to reduce the amount of sediment and nutrients entering into the waterbody, the DWR developed a management plan for the Pelican Lake Watershed. The plan identifies various practices that can be implemented to help reduce the nutrient loading to the lake.

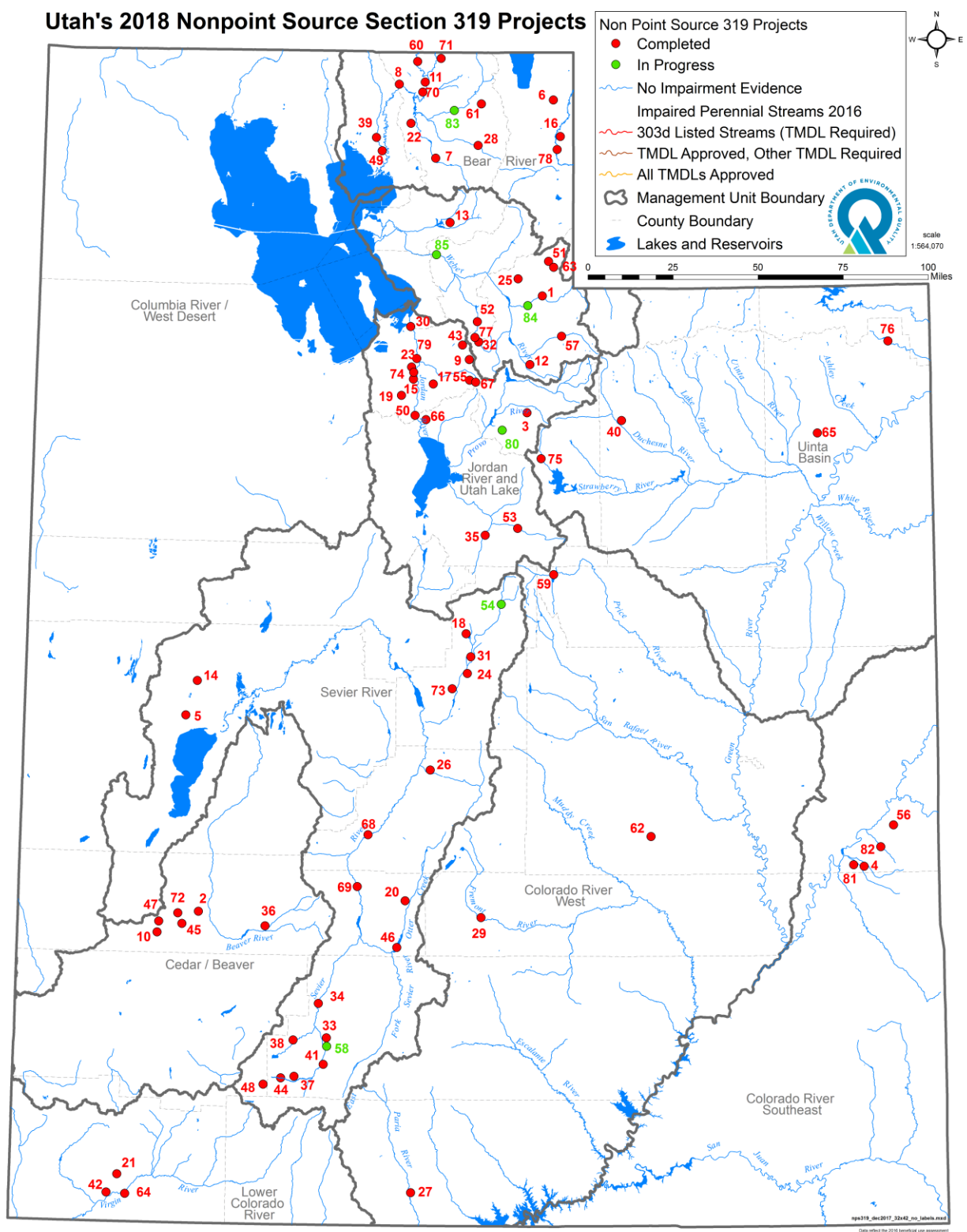
The first practice that will be installed is a sediment catchment basin that will catch the majority of the sediment that flows into the reservoir. The local irrigation company has agreed to maintain this catchment basin.

The other thing that will be installed is instream grade structures. This will help reduce erosion in the channel as well as slow the flow before the water enters into the sediment catchment basin. In discussion with DWR, they believe that many of the problems that they are experiencing now are as a result of the structures higher in the watershed being washed out, causing large scale erosion. These projects will begin to be implemented in 2019 using Section 319 and WRI funding.



*Canal Feeding Pelican Lake*

# Appendix



**Figure 6. Utah's 2018 Nonpoint Source Section 319 Projects**



**Table 6. Completed and Active 319 Projects (refer to figure 6)**

Map_ID	STATUS	PROJECT_NAME	Map_ID	STATUS	PROJECT_NAME
1	Completed	Chalk Creek	44	Completed	Groundwater (Mammoth Creek)
2	Completed	Milford Baseline GW and Aquifer Mapping	45	Completed	Mitigation of NPS Chemicals - Milford Groundwater
3	Completed	Wasatch County GW Study and Aquifer Mapping	46	Completed	Otter Creek Reservoir TMDL
4	Completed	Spanish Valley Baseline GW Mapping	47	Completed	Milford Microbial Contamination GW Study
5	Completed	South Sevier Desert GW Recharge Area Mapping	48	Completed	Cedar Mountain GW Assessment
6	Completed	Bear River Watershed Outreach Information/Education	49	Completed	Bear River Information / Education
7	Completed	Little Bear River Animal Waste System	50	Completed	Jordan River WQ/TMDL Assessment
8	Completed	Bear River TMDL Development	51	Completed	Rees Creek Demonstration
9	Completed	Millcreek Canyon Watershed Phase II	52	Completed	East Canyon Instream Flow
10	Completed	Milford Baseline GW Contaminant Inventory	53	Completed	Soldier Creek Spanish Fork
11	Completed	Bear River Groundwater Contaminant Inventory	54	In Progress	San Pitch Watershed Implementation
12	Completed	Kamas Valley Groundwater	55	Completed	Little Cottonwood ImplementationTMDL
13	Completed	Ogden Valley GW Recharge Area Mapping	56	Completed	Onion Creek Impementation TMDL
14	Completed	Millard County Groundwater	57	Completed	Upper Weber River Tech. Assist. & Information and Educ.
15	Completed	Jordan River Wetland	58	In Progress	Upper Sevier River TMDL Implementation
16	Completed	Bear River (Rich County)	59	Completed	Scofield Reservoir TMDL Implementation
17	Completed	SL County Lawn Fertilizer/Pesticides Impacts on GW	60	Completed	Middle Bear River
18	Completed	Sanpete / Moroni Groundwater	61	Completed	Spawn Creek Bank Restoration
19	Completed	Salt Lake Valley Drink. Water Source Protect.	62	Completed	Colorado River West
20	Completed	Otter Creek	63	Completed	Rees Creek Phase II
21	Completed	Washington County Septic Tank Effects on GW	64	Completed	Virgin River TMDL Implementation
22	Completed	Cache Valley GW/Aquifer Assessment & Classification	65	Completed	Oil/Gas Erosion Control
23	Completed	Jordan River Parkway Millcreek Riparian	66	Completed	Jordan Watershed Council
24	Completed	Sanpete Valley WQ Assessment and GW Mapping	67	Completed	Alta Fen Rehab
25	Completed	Echo Creek Demonstration	68	Completed	Middle Sevier River Watershed TMDL Implementation
26	Completed	Stuart Johnson Salina Canyon	69	Completed	Sevier River @Marysvalle Animal Waste Demonstr
27	Completed	Paria River Restoration Demonstration	70	Completed	Bear River Amalga
28	Completed	Hardware Ranch Demonstration	71	Completed	Cub River
29	Completed	Fremont River Demonstration	72	Completed	Milford (Private Wells)
30	Completed	Peace Trees Information/Education (Salt Lake City)	73	Completed	Sanpete Valley GW Recharge Area Mapping
31	Completed	San Pitch River Information/Education	74	Completed	Jordan River Ecosystem Restoration
32	Completed	East Canyon Creek	75	Completed	Upper Strawberry River Riparian Management
33	Completed	Upper Sevier Rangleland Improvement Demonstration	76	Completed	Matt Warner Reservoir/ Pot Creek Riparian Management
34	Completed	USU Panguitch - Sevier River	77	Completed	East Canyon Stream Restoration
35	Completed	Thistle Creek	78	Completed	Upper Bear River Riparian Restoration, BLRC
36	Completed	Beaver River	79	Completed	Jordan River Restoration
37	Completed	Mammoth Creek	80	In Progress	Wallsburg Watershed Restoration
38	Completed	Panguitch Creek	81	Completed	Spanish Valley Watershed Implementation
39	Completed	Lower Bear River Malad	82	Completed	Castle Creek Restoration
40	Completed	Duchesne River	83	In Progress	Logan River Restoration
41	Completed	Upper Sevier River Information / Education	84	In Progress	Chalk Creek Restoration
42	Completed	Virgin River Information / Education	85	In Progress	Weber River Restoration
43	Completed	Emmigration Creek Water Quality Study			

**Table 7. 319 Final Project Reports Submitted in FY-18**

Project Title	Total 319 Award	Date Received
FY-12 Upper Ever TMDL Implementation	\$95,230	10/26/2017
FY-13 USU Volunteer Monitoring Program	\$97,000	10/20/2017
FY-15 Castle Creek Restoration	\$12,530	7/11/2017
FY-15 Fremont River Restoration	\$66,200	11/15/2017

**Table 8. Summary of Active Utah 319(h) Grants FY-18**

Project Title	Total NPS Award	Grant Status
USU Volunteer Monitoring and I&E FY-13	\$97,000	Project Complete Final Report Approved
Strawberry River Restoration FY-13	\$358,044	Project Complete Final Report Approved
Duchesne River Restoration FY-13	\$66,577	Project Complete Final Report Approved
TMDL Local Watershed Coordinators FY-13	\$340,000	Project Complete Final Report Approved
USU Volunteer Monitoring Program FY-14	\$84,525	Project Complete Awaiting Final Report
Local Watershed Coordinators FY-14	\$340,000	Project Complete Awaiting Final Report
Wallsburg Watershed Restoration Project FY-14	\$150,000	Project Complete Final Report Submitted
Jordan River Restoration Project FY-14	\$199,085	Project Complete Final Report Submitted
San Pitch River Restoration FY-14	\$120,011	On going
USU Volunteer Monitoring Program FY-15	\$83,250	Project Complete Awaiting Final Report
Local Watershed Coordinators FY-15	\$340,000	Project Complete Awaiting Final Report
Strawberry River Restoration FY-15	\$75,000	Project Complete Final Report Submitted
Spanish Valley Watershed Implementation FY-15	\$118,686	Project Complete Final Report Submitted
San Pitch NPS Implementation-15	\$40,000	Ongoing
Castle Creek Restoration FY-15	\$12,530	Project Complete Final Report Submitted
Fremont River Restoration FY-15	\$66,200	Project Complete Final Report Submitted
Wallsburg Restoration project FY-15	\$143,019	Ongoing
USU Volunteer Monitoring Program FY-16	\$72,595	Ongoing
Local Watershed Coordinators FY-16	\$370,000	Project Complete Final Report Submitted
Upper Sevier Restoration Project FY-16	\$249,700	Ongoing
San Pitch Watershed Restoration Project FY-16	\$295,163	Ongoing
USU Volunteer Monitoring Program FY-17	\$75,630	Ongoing
Local Watershed Coordinators FY-2017	\$370,000	Ongoing
Logan River Restoration Project FY-17	\$558,630	Ongoing
USU Volunteer Monitoring Program FY-18	\$64,158	Ongoing
Local Watershed Coordinators FY-18	\$370,000	Ongoing
Lower Weber River Restoration Project FY-18	\$149,466	Ongoing
Chalk Creek Watershed Restoration FY-18	\$386,870	Ongoing

**Table 9. Approved TMDLs**

Water Body	Date Approved
Chalk Creek	12/23/1997
Otter Creek	12/23/1997
Little Bear River	5/23/2000
Mantua Reservoir	5/23/2000
East Canyon Creek	9/1/2000
East Canyon Reservoir	9/14/2010
Kents Lake	9/1/2000
LaBaron Reservoir	9/1/2000
Minersville Reservoir	9/1/2000
Puffer Lake	9/1/2000
Scofield Reservoir	9/1/2000
Onion Creek (near Moab)	7/25/2002
Cottonwood Wash	9/9/2002
Deer Creek Reservoir	9/9/2002

Hyrum Reservoir	9/9/2002
Little Cottonwood Creek	9/9/2002
Lower Bear River	9/9/2002
Malad River	9/9/2002
Mill Creek (near Moab)	9/9/2002
Spring Creek	9/9/2002
Forsyth Reservoir	9/27/2002
Johnson Valley Reservoir	9/27/2002
Lower Fremont River	9/27/2002
Mill Meadow Reservoir	9/27/2002
UM Creek	9/27/2002
Upper Fremont River	9/27/2002
Deep Creek	10/9/2002
Uinta River	10/9/2002
Pineview Reservoir	12/9/2002
Browne Lake	2/19/2003
San Pitch River	11/18/2003
Newton Creek	6/24/2004
Panguitch Lake	6/24/2004
West Colorado	8/4/2004
Silver Creek	8/4/2004
Upper Sevier River	8/4/2004
Lower and Middle Sevier River	9/17/2004
Lower Colorado River	9/20/2004
Upper Bear River	8/4/2006
Echo Creek	8/4/2006
Soldier Creek	8/4/2006
East Fork Sevier River	8/4/2006
Koosharem Reservoir	8/4/2006
Lower Box Creek Reservoir	8/4/2006
Otter Creek Reservoir	8/4/2006
Thistle Creek	7/9/2007
Strawberry Reservoir	7/9/2007
Matt Warner Reservoir	7/9/2007
Calder Reservoir	7/9/2007
Lower Duchesne River	7/9/2007
Lake Fork River	7/9/2007
Brough Reservoir	8/22/2008



<b>Water Body</b>	<b>Date Approved</b>
Chalk Creek	12/23/1997
Otter Creek	12/23/1997
Little Bear River	5/23/2000
Mantua Reservoir	5/23/2000
East Canyon Creek	9/1/2000
East Canyon Reservoir	9/14/2010
Kents Lake	9/1/2000
LaBaron Reservoir	9/1/2000
Minersville Reservoir	9/1/2000
Puffer Lake	9/1/2000
Scofield Reservoir	9/1/2000
Onion Creek (near Moab)	7/25/2002
Cottonwood Wash	9/9/2002
Deer Creek Reservoir	9/9/2002
Hyrum Reservoir	9/9/2002
Little Cottonwood Creek	9/9/2002
Lower Bear River	9/9/2002
Malad River	9/9/2002
Mill Creek (near Moab)	9/9/2002
Spring Creek	9/9/2002
Forsyth Reservoir	9/27/2002
Johnson Valley Reservoir	9/27/2002
Lower Fremont River	9/27/2002
Mill Meadow Reservoir	9/27/2002
UM Creek	9/27/2002
Upper Fremont River	9/27/2002
Deep Creek	10/9/2002
Uinta River	10/9/2002
Steinaker Reservoir	8/22/2008
Red Fleet Reservoir	8/22/2008
Newcastle Reservoir	8/22/2008
Cutler Reservoir	2/23/2010
Middle Bear River	2/23/2010
Pariette Draw	9/28/2010
Emigration Creek	7/18/2012
Jordan River Phase I	6/05/2013
Echo Reservoir	9/16/2014

<b>Water Body</b>	<b>Date Approved</b>
Chalk Creek	12/23/1997
Otter Creek	12/23/1997
Little Bear River	5/23/2000
Mantua Reservoir	5/23/2000
East Canyon Creek	9/1/2000
East Canyon Reservoir	9/14/2010
Kents Lake	9/1/2000
LaBaron Reservoir	9/1/2000
Minersville Reservoir	9/1/2000
Puffer Lake	9/1/2000
Scofield Reservoir	9/1/2000
Onion Creek (near Moab)	7/25/2002
Cottonwood Wash	9/9/2002
Deer Creek Reservoir	9/9/2002
Hyrum Reservoir	9/9/2002
Little Cottonwood Creek	9/9/2002
Lower Bear River	9/9/2002
Malad River	9/9/2002
Mill Creek (near Moab)	9/9/2002
Spring Creek	9/9/2002
Forsyth Reservoir	9/27/2002
Johnson Valley Reservoir	9/27/2002
Lower Fremont River	9/27/2002
Mill Meadow Reservoir	9/27/2002
UM Creek	9/27/2002
Upper Fremont River	9/27/2002
Deep Creek	10/9/2002
Uinta River	10/9/2002
Colorado River	6/17/2014
Rockport Reservoir	9/16/2014
Nine Mile Creek	3/2/2017

**Table 10. Watershed Plans**

<b>Watershed</b>	<b>Date Approved</b>
Middle and Lower Sevier	October-10
San Pitch	January-06
Upper Sevier	June-04
Virgin River	February-06
Paria River	2006
Escalante River	2006
Salt Lake Countywide Water Quality Stewardship Plan	2009
Wallsburg CRMP	10/01/2012
Duchesne River	7/31/2014
Strawberry River Watershed	12/18/2014
Spanish Valley Watershed Plan	01/05/2014
Upper Bear River Watershed Plan	January-17
San Pitch Watershed Plan (revision)	6/2/2017
Lower Weber River	Submitted to DWQ for Approval
South Fork of Chalk Creek	Submitted to EPA for Approval
Spanish Fork River	Submitted to DWQ for approval
Upper Sevier River (revision)	Initiated
Montezuma Creek	Submitted to DWQ for Approval
Logan River	Submitted to EPA for Approval
Otter Creek	Initiated
Pelican Lake	Submitted to EPA for approval
Huff Creek	Submitted to DWQ for Approval

**Table 11. State Nonpoint Source Funds Allocated in 2018**

<b>Project Title</b>	<b>Watershed</b>	<b>Project Type</b>	<b>Amount Awarded</b>
Osterlin Logan River Restoration	Bear River	Stream Bank	\$43,654.00
Maple Creek Restoration Project	Bear River	Stream Bank	\$9,348.00
Lower Bear River Implementation Plan	Bear River	Watershed Planning	\$10,080.00
Lower Bear Cover Crop Study	Bear River	Research	\$20,278.00
Bear River Fencing Project	Bear River	Stream Bank	\$17,832.00
Automated Water Quality Profiling and Weather Monitoring	Bear River	Monitoring	\$20,000.00
Pinto Creek Pasture Improvement	Cedar Beaver	Pasture Improvement	\$30,000.00
Black Flat Bridge Project UM Creek	Colorado River	Road maintenance	\$35,000.00
Helper City Price River	Colorado River	Stream Bank	\$15,000.00
Big Bend Restoration	Jordan River	Stream Bank	\$38,000.00
Storm Water Demonstration Project	Jordan River	Storm Water	\$25,000.00
Dry Creek Enhancement	Jordan River	Stream Bank	\$20,000.00
Thanksgiving Point Eco Challenge	Jordan River	I&E	\$4,000.00
Porter Fork Culverts	Jordan River	Road Improvement	\$10,000.00
Bill Beck Spanish Fork River Restoration	Provo River	River Restoration	\$20,400.00
Provo River Watershed Education Days	Provo River	I&E	\$10,000.00

Wallsburg RCPP	Provo River	River Restoration	\$75,000.00
Sweat San Pitch Riparian Restoration	San Pitch	Stream Bank	\$29,100.00
South East Stormwater Infrastructure	South Eastern Utah	StormWater	\$4,105.83
Matheson Preserve	South Eastern Utah	Wetland Restoration	\$37,600.00
Local Watershed Coordinators	Statewide	Technical Support	\$30,000.00
NPS Project Monitoring Equipment	Statewide	Monitoring	\$32,200.00
Envirothon	Statewide	I&E	\$5,000.00
AWWA Water Week	Statewide	I&E	\$4,000.00
UWCC	Statewide	Watershed Group Support	\$5,000.00
American Fisheries Society 2018 Chapter Meeting	Statewide	I&E	\$500.00
Microbial Source Tracking	Statewide	Research	\$52,096.00
Producer's Ag Waste Management Website	Statewide	I&E	\$10,000.00
Onsite Septic Systems	Statewide	Septic	\$15,438.62
Indian Springs Road Re-alignment	Uintah Basin	Road Improvement	\$40,000.00
Pelican Lake Design	Uintah Basin	Design	\$35,000.00
Andrew Monie River Project	Upper Sevier	River Restoration	\$33,941.55
Mike Wagner River Restoration	Upper Sevier	River Restoration	\$52,934.00
Joe Edman Lower Spanish Fork River	Utah Lake	Stream Bank	\$15,800.00
Payson Lake NPS Determination	Utah Lake	Research	\$10,000.00
Rex Larsen Lower Spanish Fork River	Utah Lake	Stream Bank	\$18,190.00
Thayne Stembridge	Weber River	Grazing	\$25,000.00
Huff Creek Restoration	Weber River	Watershed Restoration	\$17,054.00
Weber River Conservation Project	Weber River	Easement	\$10,000.00
Swaner Preserve	Weber River	riparian improvement	\$20,650.00
Morgan Feedlot	Weber River	AFO	\$50,000.00
Weber River Symposium	Weber River	I&E	\$13,530.00
Larkin Manure Waste Storage	Weber River	AFO	\$21,768.00
Tintic Valley PJ Study	West Desert	Research	\$7,500.00
		<b>Total</b>	<b>\$1,000,000</b>

**Table 12. Summary Conservation Practices - NRCS FY-18**

Summary Conservation Practices FY2018	Planned	Applied	Planned Count	Applied Count
Access Road (560) (ft)	750		1	
Adding food-producing trees and shrubs to existing plantings (E612133X1) (ac)	4	0	2	1
Advanced Automated IWM - Year 1 - Equipment and soil moisture is monitored, recorded and used in dec (E449114Z8) (ac)	1,116		35	
Advanced Automated IWM - Year 2-5, Soil moisture is monitored, recorded and used in decision making (E449114Z7) (ac)	3,540		109	
Advanced IWM--Soil moisture is monitored, recorded, and used in decision making (E449114Z1) (ac)	321		4	
Advanced IWM--Weather is monitored, recorded and used in decision making (E449114Z2) (ac)	547		3	
Agricultural Energy Management Plan - Written (128) (no)		5		5
Apply enhanced efficiency fertilizer products (WQL24) (ac)		241		3
Apply gypsum products to improve surface WQ by reducing dissolved P conc in subsurface drainage (E333119Z) (ac)	80		1	

Apply gypsum products to improve surface WQ quality by reducing dissolved P conc in surface runoff (E333118Z) (ac)	400		5	
Apply nutrients no more than 30 days prior to planned planting date (WQL05) (ac)		241		3
Biochar production from woody residue (E384135Z) (ac)	6		3	
Brush Management (314) (ac)	18,484	14,894	264	212
Brush management for improved structure and composition (E314133Z) (ac)	297	313	8	1
Building Envelope Improvement (672) (no)	1		1	
Channel Bed Stabilization (584) (ft)	6,690	260	14	4
Clearing and Snagging (326) (ft)	300		2	
Complete pumping plant eval for all pumps on a farm to determine the VFD potential (E449114Z3) (no)	5		5	
Complete pumping plant evaluation for all existing pumps on a farm. (E449114Z5) (ac)	507	507	17	17
Comprehensive Nutrient Management Plan - Written (102) (no)	4	2	4	2
Conservation Cover (327) (ac)	10,038	1,519	91	26
Conservation cover to provide cover and shelter habitat for pollinators and beneficial insects (E327137Z) (ac)	27		7	
Conservation cover to provide food habitat for pollinators and beneficial insects (E327136Z1) (ac)	15	0	13	1
Conservation cover to provide habitat continuity for pollinators and beneficial insects (E327139Z) (ac)	0		1	
Conservation Crop Rotation (328) (ac)	10	0	1	1
Cover Crop (340) (ac)	5,390	2,773	287	131
Cover crop to minimize soil compaction (E340107Z) (ac)	30		2	
Cover crop to suppress excessive weed pressures and break pest cycles (E340134Z) (ac)	2		1	
Critical Area Planting (342) (ac)	18	19	6	11
Cropland conversion to grass-based agriculture for soil organic matter improvement (E512106Z1) (ac)	302		10	
Cropland conversion to grass-based agriculture to reduce sediment loading (E512126Z) (ac)	4		1	
Deep Tillage (324) (ac)	37		4	
Diversion (362) (ft)		4,621		5
Drainage Water Management (554) (ac)	14		3	
Enhance development of the forest understory to capture nutrients in surface water (E666118Z) (ac)	25		1	
Enhance development of the forest understory to improve site moisture (E666115Z2) (ac)	15		3	
Enhanced field border to provide wildlife cover or shelter along the edge(s) of a field (E386137Z) (ac)	5		5	
Enhanced field border to provide wildlife food for pollinators along the edge(s) of a field (E386136Z) (ac)	21		3	
Enhanced field borders to increase carbon storage along the edge(s) of the field (E386106Z) (ac)	1		1	
Enhanced field borders to reduce water induced erosion along the edge(s) of a field (E386101Z) (ac)	1		1	
Enhanced field borders to reduce wind induced erosion along the windward side(s) of a field (E386102Z) (ac)	15		2	
Enhancement - Grazing Management (EGM) (ac)		7,765		3
Enhancement - Pest Management (EPM) (ac)		8,081		5
Enhancement - Soil Management (ESM) (ac)		316		2
Establish pollinator and/or beneficial insect habitat continuity (space) (E512139Z2) (ac)	2		4	
Establish wildlife corridors to enhance access to water (E512138Z) (ac)	1		1	
FARMSTEAD ENERGY IMPROVEMENT (374) (no)	14		6	
Fence (382) (ft)	494,040	354,617	247	135
Field Border (386) (ac)	11		5	
Filter Strip (393) (ac)	3	1	1	4
Firebreak (394) (ft)	23,035	6,364	2	3
Forage and Biomass Planting (512) (ac)	851	323	52	31
Forage and biomass planting that produces feedstock for biofuels or energy production (E512132Z1) (ac)	62		3	
Forage harvest management that helps maintain or improve wildlife habitat (cover and shelter) (E511137Z2) (ac)	1,609		32	
Forage harvest management that helps maintain wildlife habitat continuity (space) (E511139Z2) (ac)	3		1	
Forage plantings that can help increase organic matter in depleted soils (E512106Z2) (ac)	10		1	
Forest Management Plan - Written (106) (no)		3		3
Forest Stand Improvement (666) (ac)	232	210	6	6
Fuel Break (383) (ac)		3		1
GPS, targeted spray application (SmartSprayer), or other chemical application electronic control tec (AIR07) (ac)		241		3
Grade Stabilization Structure (410) (no)	5	6	5	1
Grassed Waterway (412) (ac)		7		2
Grazing management for improving quantity and quality of cover and shelter for wildlife (E528137Z1) (ac)	872		36	
Grazing management for improving quantity and quality of food for wildlife (E528136Z1) (ac)		2,221		2

Grazing management that protects sensitive areas from gully erosion (E528104Z) (ac)	2,898		3	
Grazing management that protects sensitive areas-surface water from nutrients (E528118Z2) (ac)	24,359		15	
Harvest of crops (hay or small grains) using measures that allow desired species to flush or escape (E511137Z1) (ac)	370	388	15	24
Heavy Use Area Protection (561) (sq ft)	11,780	13,002	18	9
Hedgerow Planting (422) (ft)	1,570	546	3	1
Herbaceous weed control (inadequate structure and comp) for desired plant communities/habitats (E315133Z) (ac)	229	19	9	1
Herbaceous weed control (plant pest pressures) for desired plant communities/habitats (E315134Z) (ac)	15,656	51	77	9
Herbaceous weed control for desired plant communities/habitats consistent with the ecological site (E315132Z) (ac)	575	374	23	10
Herbaceous Weed Treatment (315) (ac)	9,574	5,542	314	124
High Tunnel System (325) (sq ft)	79,414	71,861	39	36
Improved grazing management for plant productivity/health through monitoring (E528132Z3) (ac)	89,560	29,381	325	26
Improved grazing management for plant structure and composition through monitoring activities (E528133Z3) (ac)	25,724		14	
Improved grazing management for soil compaction on rangeland through monitoring activities (E528107Z2) (ac)	92,810		218	
Improved grazing management for soil compaction through monitoring activities (E528107Z1) (ac)	2,094		32	
Improved grazing mgmt for plant productivity/health through monitoring (E528132Z1) (ac)	616		24	
Improving nutrient uptake efficiency and reducing risk of nutrient losses to surface water (E590118Z) (ac)	24		4	
Incorporating "wildlife friendly" fencing for connectivity of wildlife food resources (E382136Z) (ft)	22,570		6	
Incorporating wildlife refuge areas in contingency plans for prescribed grazing-cover/shelter (E528137Z2) (ac)	11,811		44	
Incorporating wildlife refuge areas in contingency plans for wildlife food (E528136Z2) (ac)	2,679	3,195	16	9
Increase stream shading for stream temperature reduction (E391127Z) (ac)	7		1	
Install variable frequency drive(s) on pump(s) (E374144Z1) (no)	3	1	3	1
Integrated Pest Management (IPM) (595) (ac)	18,427	3,345	178	72
Intensive cover cropping (orchard/vineyard floor) to increase soil health and SOM content (E340106Z3) (ac)	4		3	
Irrigation Ditch Lining (428) (ft)	20,925	23,071	25	21
Irrigation Land Leveling (464) (ac)	834	716	48	46
Irrigation Pipeline (430) (ft)	378,302	390,715	414	392
Irrigation Reservoir (436) (ac-ft)	31	25	12	13
Irrigation System, Microirrigation (441) (ac)	126	45	12	10
Irrigation System, Surface and Subsurface (443) (ac)	824	214	50	18
Irrigation Water Management (449) (ac)	5,812	7,673	135	241
Leave standing grain crops unharvested to benefit wildlife food sources (E328136Z) (ac)	71	711	2	17
Lighting System Improvement (670) (no)	116		2	
Livestock Pipeline (516) (ft)	622,102	232,109	164	102
Livestock Shelter Structure (576) (no)	2		2	
Maintaining quantity and quality of forage for animal health and productivity (E528140Z1) (ac)	5,314		44	
Manage livestock access to streams/ditches/other waterbodies to reduce nutrients in surface water (E472118Z) (ft)	5,890		4	
Monitor key grazing areas to improve grazing management (PLT02) (ac)		16,484		6
Mulching (484) (ac)	1	0	2	1
Native grasses or legumes in forage base to improve plant community structure and composition (E512133Z1) (ac)	1		1	
Nutrient Management (590) (ac)	2,451	1,476	78	68
Obstruction Removal (500) (ac)	45	1	24	6
On-Farm Secondary Containment Facility (319) (no)	7		7	
Open Channel (582) (ft)	3,390		3	
Pollinator Habitat Plan - Written (146) (no)	2	1	2	1
Pond (378) (no)	3		3	
Pond Sealing or Lining, Bentonite Sealant (521C) (no)		2		2
Pond Sealing or Lining, Compacted Clay Treatment (521D) (no)		4		4
Pond Sealing or Lining, Compacted Soil Treatment (520) (sq ft)	596,547		5	
Pond Sealing or Lining, Flexible Membrane (521A) (no)	2		2	
Precision Land Forming (462) (ac)		1		1
Prescribed Grazing (528) (ac)	51,499	88,639	423	431
Prescribed grazing that improves or maintains riparian and watershed function-erosion (E528105Z) (ac)		12,248		101
Pumping Plant (533) (no)	96	91	96	90
Range Planting (550) (ac)	9,137	12,621	109	96
Range planting for improving forage, browse, or cover for wildlife (E550136Z) (ac)	245	206	6	1
Range planting for increasing/maintaining organic matter (E550106Z) (ac)	505		4	



Reduce ozone precursor emissions related to pesticides by utilizing IPM PAMS techniques (E595129Z) (ac)	218		12	
Reduce risk of pesticides in surface water by utilizing IPM PAMS techniques (E595116Z) (ac)	1,144		112	
Reduce risk of pesticides in surface water by utilizing precision pesticide application techniques (E595116X) (ac)	246		12	
Reduce risks of nutrient losses to surface water by utilizing precision ag technologies (E590118X) (ac)	1,946		155	
Reduced tillage to increase soil health and soil organic matter content (E345106Z) (ac)	240		3	
Residue and Tillage Management, No-Till (329) (ac)	1,240	1,091	67	46
Residue and Tillage Management, Reduced Till (345) (ac)	8,321	849	57	10
Riparian Forest Buffer (391) (ac)	14	0	7	1
Riparian Herbaceous Cover (390) (ac)	8		8	
Roof Runoff Structure (558) (no)	1	1	1	1
Rotation of supplement and feeding areas (WQL03) (ac)		16,485		6
Seasonal High Tunnel System for Crops (798) (sq ft)		1,311		1
Silvopasture for wildlife habitat (structure and composition) (E381133Z) (ac)	5		4	
Split nitrogen applications 50% after crop/pasture emergence/green up (WQL07) (ac)		241		3
Spoil Spreading (572) (ac)				
Spring Development (574) (no)	16	4	16	4
Sprinkler System (442) (ac)	5,712	6,995	356	387
Stewardship Payment (SP) (ac)				
Stockpiling cool season forage to improve plant productivity and health (E528132Z2) (ac)	150		5	
Stream Crossing (578) (no)	11	8	11	9
Stream Crossing (728) (no)				
Stream crossing elimination (E578139X) (no)	1		1	
Stream Habitat Improvement and Management (395) (ac)	16	10	5	2
Streambank and Shoreline Protection (580) (ft)	18,617	15,281	34	56
Structure for Water Control (587) (no)	595	195	289	186
Structures for Wildlife (649) (no)	10,837	29	37	29
Terrace (600) (ft)	143,058	167,167	37	23
Tree/Shrub Establishment (612) (ac)	5	44	17	12
Tree/shrub planting for wildlife cover (E612137Z) (ac)	6	0	18	1
Tree/shrub planting for wildlife food (E612136Z) (ac)	7		15	
Tree/Shrub Pruning (660) (ac)	3		2	
Tree/Shrub Site Preparation (490) (ac)		1		1
Upland Wildlife Habitat Management (645) (ac)	59,501	18,149	243	68
Use drift reducing nozzles, low pressures, lower boom height and adjuvants to reduce pesticide drift (AIR04) (ac)		241		3
Use of multi-species cover crops to improve soil health and increase soil organic matter (E340106Z2) (ac)	364	3	28	1
Use of SHA to assist with development of cover crop mix to improve soil health and increase SOM (E340106Z4) (ac)	1,946		155	
Waste Separation Facility (632) (no)	2		2	
Waste Storage Facility (313) (no)	3	2	3	2
Waste Transfer (634) (no)	1	5	1	5
Waste Treatment (629) (no)	2		2	
Water and Sediment Control Basin (638) (no)		11		9
Water Well (642) (no)	116	206	17	7
Water Well Disinfection (803) (no)				
Watering Facility (614) (no)	324	165	316	159
Wetland Wildlife Habitat Management (644) (ac)	6		1	
Windbreak/Shelterbelt Establishment (380) (ft)	5,211	800	10	1
Windbreak/Shelterbelt Renovation (650) (ft)				
Woody Residue Treatment (384) (ac)	9,002	10,291	77	74

**Table 13. Milestones of the Utah Statewide Nonpoint Source Program**

Milestone	2014	2015	2016	2017	2018
<b>Objective 1: Environmental Protection:</b>					
Number of TMDLs Completed	2	1	0	1	1
Number of TMDLs Initiated	Huntington Creek-selenium Parley's Creek- E.coli Lower Bear River- TP Red Creek Reservoir-TP	Nine Mile Creek- Temperature Silver Creek-TDS Utah Lake-Phosphorus Jordan River-Ecoli, Arsenic, Cadmium	Fremont River-E.coli	North fork Virgin River- E.coli	-Spring Creek(Heber)- E.coli -Snake Creek- Arsenic -Jordan River- DO -Provo River- Aluminum & Arsenic

Number of 9 Element Watershed Based Plans Developed	Spanish Valley North Fork of Virgin	Price River Upper Bear River North Fork of Chalk Creek Weber River	Mantua/Maple Creek	Logan River Lower Weber River San Pitch	-Huff Creek -Pelican Lake -Salt Lake Countywide waterquality stewardship plan
Number of 9 Element Watershed Based Plans Initiated	Price River Upper Sevier San Pitch Middle Green/Desolation Canyon Weber River North Fork of Chalk Creek Spanish Fork River Pinto Creek	Huntington Creek Maple Creek Montezuma Creek	Logan River Otter Creek Pelican Lake	Huff Creek	NA
Number of projects dedicated to the protection of threatened waterbodies identified in Utah's 303(d) list	The Cart Creek Watershed project funded using State NPS funding.	Tie Fork road Stream Crossing funded using State NPS funding.	One NPS Project was dedicated to watershed protection. This is the Montezuma Creek Watershed Plan Development.	No project selected for funding in FY-2017 were focused on protecting unlisted waterbodies.	In FY-18 a State Nonpoint Source grant was given to the Bear Lake Watch to install long term monitoring stations on Bear Lake to monitor water quality. This will allow DEQ to take action if water quality begins to degrade.
Number of projects focused on groundwater protection throughout the state	One Septic I&E Program, One Groundwater outreach program \$41,142. Bothwell ground water has continued to be implemented. \$14,358 for septic enhancements.	Aside from two grants focusing on septic system maintenance, no funding was spent on groundwater protection using FY-15 funding.	The Division of Water Quality set aside \$12,538 in State NPS funding to help private landowners with maintenance of their septic systems.	-\$10,000 was set aside for septic improvements around the state.  -\$7,219 was awarded to UGS to determine the impacts to groundwater in areas where pinion/juniper treatments are taking place.	- \$15,438 was allocated to help property owners maintain septic tanks that are failing, or in need of maintenance around the state.  -The Division of Water Quality has begun working with the Division of Drinking water to locate areas where source water protection plans are in place, and implementation work need to restore, or protect ground water quality.
<b>Objective 2: Improve Program Efficiency and Effectiveness through Reporting and Evaluation.</b>					
Total Number of Stream Miles Restored	0.71 miles of in-stream restoration  2.01 miles of riparian fencing	2.2 miles of stream restoration implemented in FY-2015  5.8 miles of riparian fencing implemented in FY-2015	1.61 miles of Stream restoration implemented in FY-2016  2,206 Feet of riparian fencing installed in FY-2016	1.71 miles of Stream restoration implemented in FY-2017  2.07 linear feet of riparian fencing installed in FY-2017  1 animal feeding operation	7.69 miles of stream restoration implemented in FY-2018. This includes projects implemented using 319, State NPS, and EQIP funding.  3,490 feet of riparian fencing installed in FY-2018.  28.6 acres of riparian planting.

Total Estimated Load Reductions Reduced in Project Areas (includes reductions from annual and final reports)	Phosphorus- 8,899 lbs/year Sediment- 8,942 tons/year E.coli- 3,100 lbs/year Nitrogen-20,385 lbs/year	Nitrogen- 7,766 lbs/year  Sediment- 903 tons/year  Phosphorus-4,286 lbs/year  TDS-2,359 tons/year	Nitrogen- 6,168 lbs/year  Sediment- 691 tons/year  Phosphorus- 1,976 lbs/year	Nitrogen-564.89 lbs/year  Sediment- 322.6 tons/year  Phosphorus- 214.7 lbs/year	Nitrogen-1353.6 lbs/year  Sediment- 622.2 tons/year  Phosphorus- 374.5 lbs/year
Number of Final Project Reports Submitted	9 (See Table B)	13 (See Table B)	8 (See Table B)	4 (See table B)	4 (see table B)
Number of 319 Grants Open During the Fiscal Year	19 (See Table C)	17 (See Table C)	12 (See Table C)	12( See Table C)	12 (See Table C)
Amount of Unexpended Funds in Each Open 319 Grant	FY-09- \$206,697 FY-10- \$148,287 FY-11- \$76,155 FY-12- \$295,598 FY-13- \$724,575 FY-14- \$893,621	FY-11- \$62,994 FY-12- \$190,509 FY-13- \$167,993 FY-14-\$558,943 FY-15- \$879,521	FY-11- \$8,180 FY-12- \$62,018 FY-13- \$31,613 FY-14- \$364,696 FY-15- \$395,640 FY-16- \$987,458	FY-14- \$178,184 FY-15- \$184,632 FY-16- \$561,454 FY-17- \$1,004,260 (See Table1)	FY-14- \$47,011 FY-15- \$142,862 FY-16- \$437,786 FY-17- \$690,494 FY-18-\$970,494 (See Table1)
Number of Success Stories Showing the environmental Benefits of Completed NPS Projects Submitted to EPA for Approval	1 - Fremont River	3 -Main Creek Spring Creek Strawberry River	2-Fremont River (WQ10) Strawberry Reservoir	1-Chalk Creek Watershed (WQ-10)	1-North Fork of the Virgin River
<b>Objective 3: Improve Public Participation and Understanding of NPS Issues</b>					
Number of Participants Involved in the Statewide Volunteer Monitoring Program	448	980	1048	1249	
Number of I&E Projects Implemented with Section 319 and State NPS Funding	6 projects -AFO Outreach (NPS) -Septic I&E Outreach (NPS) -Volunteer monitoring program (319) -Mercury Take Back (NPS) -Strawberry Valley I&E (NPS) -Rain Water Exhibit (NPS)	7 projects -Cedar Beaver I&E (319) Volunteer Monitoring Program (319) AFO outreach (NPS) Envirothon (NPS) Riparian Grazing Workshop (NPS) Onsite BMP Manual (NPS) Water Week AWWA (NPS)	7 Projects -Fair Child Challenge (NPS) -Mill Creek Monitoring Signage (NPS) -Nutrient Producer Website (NPS) -Envirothon (NPS) -Water Week 2016 AWWA (NPS) -Sevier River I&E (NPS) -Provo Watershed Festival (NPS) -Volunteer Monitoring Program (319)	8 Projects -Water Week Library Program (NPS) -Watershed Education in the Provo River Watershed (NPS) -Producer's Website (NPS) -Engaging Youth in Manure Management (NPS) -Thanksgiving Point ECO Challenge. (NPS) -Pet Waste I&E in Jordan River (NPS) -Envirothon (NPS) -Utah Water Watch (319)	8 Projects -Thanksgiving point Eco Challenge -Provo River Watershed Education Days - Envirothon -AWWA Water Week -American Fisheries Society 2018 Chapter meeting -Producer's Ag. Waste Management Website -Weber River Symposium -Utah Water Watch
Updates Made to the State NPS Program Website	We have begun working with USU Extension to create a website focused solely on NPS pollution. This will include an interactive map showing where projects have taken place in the state as well as movies highlighting the NPS projects that have been implemented throughout the state.	Utah State University has made good headway on the new NPS Program website. This website will be completed by the end of the calendar year. The website can be found at: <a href="http://www.utahcleanwater.org/">http://www.utahcleanwater.org/</a>	The NPS Program Website has now been completed, and Utah State University continues to maintain it as new information becomes available.	The NPS Program Website has now been completed, and Utah State University continues to maintain it as new information becomes available.	The NPS Program Website has now been completed, and Utah State University continues to maintain it as new information becomes available.
<b>Objective 4: Improve Data Collection and Management</b>					

Track Updates Made to Enhance NPS Monitoring in the Division of Water Quality's Annual Monitoring Strategy	The equipment that was purchased in 2013 has been distributed to the local watershed coordinators, and a training was conducted during the summer of 2014 showing the local watershed coordinators how to use this equipment.	Watershed Coordinators are now collecting data monthly to demonstrate the effectiveness of the best management practices that are being implemented. Monitoring locations were selected for the Bear River Watershed in cooperation with the local work group, and pre-implementation data has been collected since the summer of 2015. The local watershed coordinator is also working with Tetratech to develop a SAP in the Upper Sevier Watershed.	The Division of Water Quality is in the process of developing a statewide SAP for the monitoring of NPS projects. This statewide SAP will summarize all of the monitoring that will need to take place throughout the State of Utah, who will be responsible for the collection of that data, and how often it will be collected. This will also include the installation of long term continuous monitoring stations. In locations where local watershed coordinators or partners are unavailable to collect the data the DWQ Monitoring staff will collect data. The first statewide SAP should be completed and ready to implement by the end of the State fiscal year.	A Statewide SAP has been developed in cooperation with the DWQ Monitoring and assessment sections. Sites were added to help determine if the waterbody can be removed from the 303(d) list of impaired waterbodies, as well as determine the pollutant load reductions obtained through project implementation. This will be a living document that will be revisited every year.	The Statewide Nonpoint Source Project Monitoring SAP was updated, and continues to be implemented. To help watershed coordinators become more efficient at monitoring, \$32,000 in NPS funds were allocated to purchase monitoring equipment. This equipment has been distributed to the local watershed coordinators, and is currently in use.
Number of SAPs Developed	Many of the SAPs needed throughout the basins were developed last year. It is anticipated that several more will be developed next year.	During FY-2015 the local watershed coordinators dedicated the majority of their time to implementing the 10 existing SAPs. In talking with the local watershed coordinators, it is anticipated that 2-3 more SAPs will be developed in 2016.	During FY-2016 a SAP was developed for the San Pitch and Maple Creek Watershed. SAPs are currently being developed for the South Fork of Chalk Creek, The Upper Sevier River, and Logan River.	SAPs were developed or updated for the Logan River, Chalk Creek, the Upper Sevier, the San Pitch, the Strawberry River, the Spanish Valley, Main Creek, and the North Fork of the Virgin River	SAPs were developed or updated for Pelican Lake, the Logan River, Chalk Creek, the Upper Sevier, the San Pitch, the Strawberry River, the Spanish Valley, Main Creek, and the North Fork of the Virgin River
Track Status and updates of AWQMS database	See Section 4.4 of this report	See Section 4.4 of this report	See Section 4.4 of this report	See Section 4.4 of this report	See Section 4.4 of this report
Report on Water Quality Data Uploaded to the EPA WQX Database	See Section 4.4 of this report	See Section 4.4 of this report	See Section 4.4 of this report	See Section 4.4 of this report	See Section 4.4 of this report
<b>Objective 5: Improve Coordination of Governmental and Private Sectors</b>					
Hold Annual NPS Management Program Coordination Meetings	Held February 26 <sup>th</sup> , 2014	Held March 3 <sup>rd</sup> , 2015	Held on March 2 <sup>nd</sup> , 2016	Held on March 7 <sup>th</sup> , 2017.	Held on March 8 <sup>th</sup> , 2018
Conduct Annual Consistency Reviews with State and Federal Agencies	Conducted October 7 <sup>th</sup> and 8 <sup>th</sup> , 2014	Conducted August 12 <sup>th</sup> , 2015	Conducted October 5 <sup>th</sup> -6 <sup>th</sup> , 2016	Conducted on October 3 <sup>rd</sup> -4 <sup>th</sup> , 2017	Was not held due to the bad fire season experience in Utah. All Federal partners were unable to organize the tour.

Number of Water Quality Task Force Meetings Held During the Fiscal Year	Three meetings were held. August 7 <sup>th</sup> , 2013, November 19 <sup>th</sup> , 2013, and May 19 <sup>th</sup> , 2014.	Four meetings were held. August 25 <sup>th</sup> , 2014, December 4 <sup>th</sup> , 2014, and February 12 <sup>th</sup> , 2015, June 17 <sup>th</sup> , 2015.	Three meetings were held. October 7 <sup>th</sup> , 2015, January 7 <sup>th</sup> , 2016, and April 6 <sup>th</sup> , 2016.	Five meetings were held on: July 20th, 2016 October 20th 2016 January 19th, 2017 April 11, 2017 June 29th, 2017	Three Water Quality Task Force meetings were held on: October 5th, 2017 January 9 <sup>th</sup> , 2018 June 14th, 2018
Amount of Funding Used to Leverage 319 Funding Throughout the State	\$4,571,096 (See Table G)	\$3,901,572 (See Table G)	\$5,631,010 (See Table 5)	\$6,038,195 (See Table 5)	\$7,977,399 (See Table 5)

**Table 14. FY-18 BLM WRI Projects**

2018 Utah WRI/HLI Accomplishments				
Project Id	Title	Terrestrial Acres	Aquatic/Riparian Acres	Stream Miles
3235	Gandy Marsh Prescribed Burn	86.49	0	0
3290	Baboon - Minersville 3 Allotment(Year 1) - Sagebrush Planting (300 acres)	251.65	0	0
3308	Dark Canyon Plateau Phase III	791.95	0	0
3342	Restoration of Riparian Lands and Wetlands in Courthouse Wash Watershed: Year 1	0	214.04	7.34
3349	FFO Meadow Phase 3	207.18	0	0
3356	Watershed Improvements in Mill Creek Canyon	0	390.5	9.4
3642	Boulevard Ridge Pinyon and Juniper Removal Maintenance Project	932.17	0	0
3644	Hatch Cove/Diamond Mountain Lop and Scatter Project	1,819.49	0	0
3650	Warm Spring Hills Juniper removal project phase 2	1,489.61	0	0
3702	White River Enhancement Project Phase 2	92.12	0	1.24
3718	Lower San Rafael River and Riparian Corridor Habitat Improvement: Phase 1a	0	73.2	1.23
3730	Riparian Habitat Restoration on the Lower Dolores River	0	207.41	1.99
3737	Cockscornb Vegetation Enhancement Project	619.62	0	0
3779	Protection and Enhancement of Side Channel Habitat on the San Juan River, Phase 1	0	1.01	0
3786	Jenny Clay Flex Harrow	1,575.69	0	0
3854	Antimony (Pine Creek)	760.84	0	2.92
3861	Cedar Fire Seeding Project	1,003.15	0	0
3867	Crawford Mountain Sage-grouse Habitat Enhancement	2,395.04	0	0
3934	Indian Peak/Spanish George (Hamlin Valley Habitat Restoration Project - Sagebrush (Year 3))	2,970.58	0	6.93
3936	Adams Well Vegetation Treatment (Upper Long Hollow (Narrows)) - Phase 3	2,052.96	0	0
3939	Blanding East Phase II	603.4	0	0



3943	Long Hollow Sheep/Parowan Gap (Upper Long Hollow Vegetation Treatment (Phase 3))	5,620.58	0	8.36
3948	UT Dolores River Riparian Restoration	0	258.6	1.08
3962	Indian Creek Wildcat	1,243.89	0	0
3963	UKC - Spaniard Spring/Sink Valley	1,071.33	0	0
3964	UKC - Burnt Cedar Point, Phase I	1,160.94	0	0
3965	Antelope-Pine Valley Hand Thinning	4,881.81	0	0
3966	Antimony (Forest Creek)	994.38	0	0
3967	Fremont-Little Valley Mastication	1,321.94	0	0
3970	South Slope Project Area - Twelve Mile Treatment	1,551.60	0	0
3975	South Canyon (Roller Mill)	1,916.15	0	0
3977	Yellowjacket (Buck Pasture)	3,077.91	0	0
4008	Government Creek wet meadow enclosure	0	0.58	0
4009	Colorado River Cross Watershed Restoration	57.9	814.88	11.64
4014	FFO Furner Valley Bullhog Phase 3	1,630.84	0	0
4018	Dark Canyon Plateau Phase 4	1,122.13	0	2.24
4019	Erickson Pass Habitat Enhancement	2,062.14	0	0
4037	Mill Creek Watershed and Riparian Restoration VIII	0	158	4.97
4080	Moab Mule Deer Winter Range Habitat Improvement - Phase II	649.82	0	0
4087	Stateline (Hamlin Valley) Sagebrush Habitat Restoration Project (Year 3)	861.75	0	3.99
4139	White River Enhancement Project Phase 3	241.11	0	0
4210	South Willow Bullhog	532.07	0	0
4295	Green River District Plateau Herbicide Treatments	4,324.53	0	0
4365	Wildcat Fire Restoration	13,176.34	0	0
4369	Cottonwood Trail Fire Rehab Project	1,214.78	0	0
4377	Blue Mountain Miner's Draw Project	0	0	0
4384	Stream Complex ESR	5,759.54	0	0
4388	Kelton Complex Wildfire Rehabilitation	4,056.91	0	0
4391	Sage Fire Rehabilitation Project	703.29	0	0
4392	Cobble Complex Fire Rehabilitation Project	2,055.71	0	0
4515	Indian Peak East Slope Bullhog	0	0	0